

Macro Making:
How Mini-Apps
Help-p. 20

Empowering the
Disabled-p. 30

The Call of the
'Telecard'-p. 36

5-7 JULY 1994 \$2.50

COMPU\$ERVE

MAGAZINE



*Multimedia's Audio-Visual Confection
Is Sweetening PC Art,
Business, Education and Fun*

Questions?

Is there an alternative procedure for amniocentesis?

What software will link laptops to LANs?

Which should I buy: Ford Explorer or Jeep Grand Cherokee?

What should I consider when saving for my kid's college education?

Which defense contracts has AAI Corp won?

How can I get my baby to sleep through the night?

Are there any reviews of Madonna's latest book?

How do I care for my child's croup cough?

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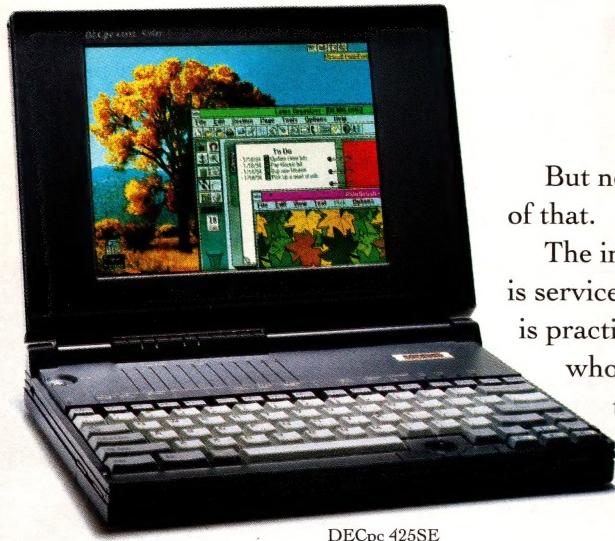
What are the low-cost alternatives when wiring network hubs?

\$5 Rebate for New BDP Users in July
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How much did Value City Department Stores pay for Gee Bee?

How about tips and techniques on writing my resume?

Can I find a



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digital
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CONTENTS

FEATURES

Feature Story

10 It's Multimania!

Who would have thought even a few years ago that the descendants of boring, slow boxes with command-line interfaces and eye-straining, monochrome monitors would evolve into an eye-popping, peppy amalgam of computer, television and stereo? Now that multimedia-in-a-box systems are proliferating (and selling), what do you do with one? Everything from exploring CD-ROM references and games to creating electronic photo albums, term papers, business presentations and digital art, say Compu-Servers. Plus: Introducing *CompuServeCD*; where CD-ROMs come from; picking a winning disc; multimedia PC upgrades; an overview of related forums.

Computing Services

20 Saving Time with Macros

Maybe you've never bothered to take advantage, but many word processors and spreadsheets come with a macro capability, letting you record or construct a series of oft-repeated commands, keystrokes or mouse actions that can be played back. Macro writing can take a little time to learn (more complex efforts may start to resemble applications and seem like programming), but spares you from hours of mindless pointing and clicking. Includes: System-level macros and scripting; macro uploads.

26 Previously Owned PCs:

Thanks to the cycles of obsolescence, there's a brisk market for the buying and selling of used computers online.

Personal Enterprise

30 Abling the Disabled

For most of us, a computer is simply a productivity tool, letting us do much more much faster. Yet for those with a physical limitation, "adaptive" hardware and software can be the main means of making a living. Here's how speech synthesizers, large-print displays, soft-touch keyboards and even e-mail help the disabled conduct quality business. With: Online resources; tips for employers.

33 Resumes with a Little Extra:

Listing your career achievements in hypertext? Electronic and multimedia versions of the job-search synopsis are a new twist.

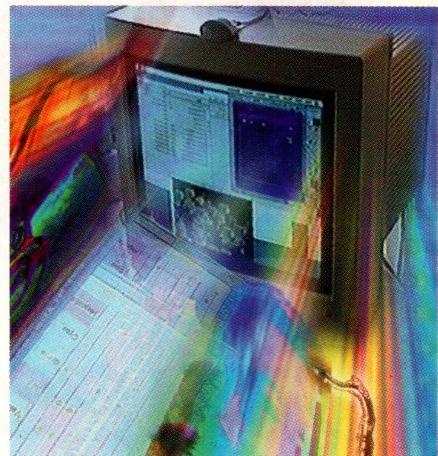
Random Access

36 Plastic Passion

Stamps, sports cards, kitschy shake-'em-up snow domes—finally there's a collectible souvenir from the pit stops of the Info Highway. Colorful telephone debit cards, or "telecards" for short, are hot items in Europe and Asia and are beginning to attract attention in the United States. Those following the phenomenon (there are catalogs and shows already) call the Collectibles Forum home. With: Forum files.

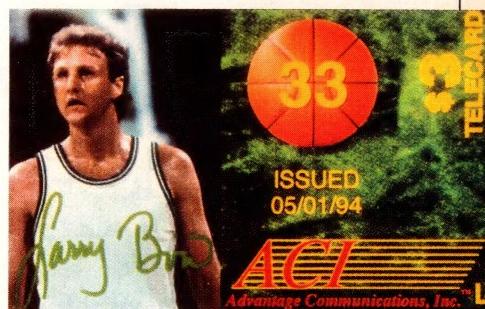
39 International Geographics:

A look at how local-content and local-language services online let members immerse themselves in the news and culture of other places.



LANCE JACKSON

Multifunctional multimedia—p. 10



On call for phone cards—p. 36

DEPARTMENTS

Too Hot to Print

► Catch computer industry news as it happens, read today's news, commentary and product reviews. You'll find it only in *Online Today*, a daily updated newspaper.

Online Today Guide	OLT-5
Today's News	OLT-90
Behind the Screens	OLT-130
Product Reviews	OLT-200

3 Dear Reader

4 Letters

6 Monitor

42 Downloadable Notables

44 Book Reviews

50 Readers' Writes

52 Update: Last-Minute News

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Dear Reader

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CompuServe Magazine published a multimedia cover feature in January 1992, which tried to come to grips with the then emerging technological blend of sound, graphics and text. It addressed questions such as: Who would be the leading manufacturers of interactive hardware and software? What would the applications be like and how would they be used? CompuServe members frequenting the new multimedia forums answered that multimedia was a technology both hard to define and hard to master.

How times have changed. Computer-linked CD-ROM drives, stereo speakers and high-resolution color displays are now commonplace in homes and businesses. CompuServe members are no longer trying to define the technology but are striving to get the most out of it. So we decided to seek out those members who apply the technology creatively and unusually, going beyond the predictable uses of interactive gaming and encyclopedias, and to share their ideas. These results can be found in "Multimedia Turns On" on page 10, where members discuss everything from the multimedia family photo albums to audio accompaniment for arm-wrestling contests.

The feature also shares news about *CompuServeCD* on page 16. You won't want to miss out on this CD-ROM extension of the Information Service, which offers online services and resources via graphics and sound. *CompuServeCD* staff visit the *CompuServeCD* Forum to discuss the project, so stop by to see what's going on. In addition, check out the multimedia-related forums, listed on pages 18 and 19, where you can get advice from multimedia experts and download files that provide useful utilities and information.

* * *

Another reason CompuServe members are tapping into multimedia is to create attention-getting resumes. They're using HyperCard, Macromedia's Director, AutoCAD and other programs to jazz up their resumes with sound and graphics, then uploading the documents to forum libraries. ASCII versions are also popular.

Many employers actually prefer electronic resumes—they're easier to read than faxed ones and can be searched via keywords. Read "A Digital Curriculum Vitae" on page 33 to learn more about why this job-search method is catching on. In addition, check out the list of resume guidance files on page 34. Many shareware and commercial programs, templates and general tips for and about resume writing exist in forums, offering information and assistance.

* * *

CompuServe continues to expand its local-information and local-language forums and databases; we're putting the world in your computer. Would you prefer to read *U.S. News & World Report* or *Der Spiegel*? Do you need information for a California vacation, provided in the California Forum, or for a London vacation, provided in U.K. Accommodation & Travel Services? Do you need technical support from French-speaking developers of Microsoft-related products in the Microsoft France Forum or from Italian-speaking developers in the Microsoft Italy Forum?

We may be a U.S.-based company, but we're a provider of worldwide information. That role allows us to meet the information needs of anyone anywhere. In addition, it spawns cross-cultural dialogue in the country- and region-specific forums, such as the Japan, Pacific, Deutsches Computer, U.K. and European forums. No longer do CompuServe members have to travel to experience meaningful conversations with people from different countries. They can simply log on to the Information Service. Discover where those exchanges are happening in "International Info-Trade," on page 39. Then turn the page to get an idea of our growing international presence.

Kassie Rose
Editor

Letters

Computer Graphics

As a professional photographer, I read "Sight Onscreen" with interest (April, p. 10). I was dismayed, however, to find no mention of copyright issues in the main body of the article and that "Copyright 'Can'ts'" (p. 14) didn't appear until the fifth page of this 10-page spread.

In the "Can'ts," the author leaves out a few important facts: Permission must be obtained from the creator *in advance* of any alteration and redistribution. The statement "... you can't download copyrighted images and try to make money from them" also applies to use in "comps"—mock-ups of ads, brochures, etc.

Copyright is the creator's only protection, but it is weakened by ignorance of the issues. While CompuServe provides a copyright warning notice to anyone uploading a file, there is no similar notice to those about to download files. How about a change in this regard?

Margo Taussig Pinkerton
Canaan, New Hampshire
72470,132

Ergonomically Correct

"It's All in the Wrist" (April, p. 35) is a very well-written article about a subject that all CompuServe members should know about: ergonomics. I appreciated the authors' devoting significant space talking about the visual aspects of computer eyestrain. However, they neglected to emphasize that all computer users should have complete eye examinations at least yearly to be sure that there is no damage to their eyesight. They should tell their doctor about their working environment and conditions. Proper ergonomics is important, but much of the success of using a computer depends on the condition of your eyes.

Jeffrey Anshel, optometrist
La Costa, California
71534,1745

Surge Protectors

As a hardware evaluator and technical support person for a Fortune 100 company, I know from personal experience that there are a lot of nonprotecting surge protectors floating around (Letters, April, p. 4). One client brought us the remains of a device whose box was labeled "UL Listed, surge protector." We were amazed to find it offered no protection and was no more than a multiple outlet extension cord. This \$20 deception cost the client several thousand dollars in damages and lost data.

"UL Listed" simply means that electrical safety requirements have been met. A true surge protector must state that it complies with UL 1449 (the specification for line voltage surge suppression devices—also called Transient Voltage Surge Suppressor, or TVSS) and/or with UL 497/IEEE 587 (the specifications for communication circuit protection devices).

With very few exceptions, you get what you pay for when purchasing a surge protector. Cheaper units may not offer protection on all three paths (hot-neutral, hot-ground and neutral-ground).

John Schaefer
Toms River, New Jersey
73654,2514

More Things Cyber

In the article "Cyberego" (March, p. 17), David Kemp cautions that because of the lack of spontaneity and the anonymous nature of online conversation, there is a danger that we may misrepresent our "true selves." While this is a legitimate consideration, there is a flip side: In our daily lives we always adapt "who we are" to whom we're with. We shield much of ourselves from those around us. In the safety of cyberspace, that guard can be (somewhat) lowered. For people who may not be as socially adept as others, or who are just plain shy, the online world may be the one place where they can truly express themselves.

In live discussions, few of us think as fast on our feet as we'd like to. We may lose the point just trying to keep up or to "one up" the other person. But that doesn't mean that we're not knowledgeable or that we don't have valid input. Cyberspace, with its leisurely pace, gives us the opportunity to ponder, to cast about inside ourselves and then to articulate thoughtfully and succinctly. Our writings are born out of who we are. This medium has expanded my true self, not masked it.

Harold Courtney
New York, New York
73631,3543

Bicycle Commuting

Thanks for the article about cycling being the most practical way to travel to work and play ("The Endless Cycle," March, p. 48). Can 5 billion Chinese people be wrong? Americans use their brains but forget about the lower halves of their bodies. Commuting to work on a bicycle is environmentally sound and physically rewarding, not to men-

tion what it does for the spirit.

I commute 20 miles a day through the Allegheny National Forest to my job as training director for an adolescent treatment program. Last summer, as I covered more than 2,300 miles, I was blessed to see bears, deer, turkeys, rattlesnakes, grouse and even a coyote. Since I've been commuting to work for the past 22 years, I've never had a headache that lasted during the commute to or from work. Maybe it's about time to create a BIKENET on CompuServe. I'm game.

Bert Nemcik
Marienville, Pennsylvania
71554,1757

Thanks for the article on bicycle commuting. I especially value the file references in the Outdoors Forum's Library 7. I commute 12 miles each way, often before dawn.

Some companies offer incentives to users of alternative transportation. My company offers savings bonds on a quarterly basis for achieving a quota of commuting days spent using any alternative transportation, including car pools and, of course, bicycling. I have cycled to work for the past 10 years, not because of monetary incentive, but because I need the fresh air and exercise. My pet peeves: Daylight Savings Time (should be abolished), two-lane roads without white edge lines (because I like to see where I am going) and oncoming cars with blinding bright lights.

James E. Harris
Lancaster, California
71662,432

Yardening

Regarding Chuck Pearson's letter (April, p. 4), he should not have been so quick to criticize Jeff Ball's use of the word "pesticide" as a synonym for "herbicide" ("TV's Soil Man Talks 'Yardening,'" January, p. 14).

A pesticide is any substance used to control pests and is not limited to control of insects. Pesticides do indeed include herbicides, as well as fungicides, rodenticides, insecticides, miticides, acaricides, nematocides and molluscicides.

David Brenner,
certified New York State
private pesticide applicator
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MONITOR

Feeling Low? Go Ahead, Rub It In

A gentle massage feels great after a day dealing with life's little tortures. But according to the members who meet in the Holistic Health Forum's (GO HOLISTIC) Section 8, "Massage and Bodywork," a good rubdown also can be good for what ails you.

George Friedline, who has worked as a massage practitioner for almost 20 years, says massages help people feel better in at least two ways: "The greatest benefit is in breaking up congestion in connective tissue," he observes. "Next would probably be releasing highly tense tissue affecting range of motion or other movement."

Chiropractor and massage therapist Gene Desepoli can also attest to the benefits of massage therapy. "My patients respond and heal much faster because massage is incorporated as part of their treatment," he says.

Aside from his personal experience, forum member Paul Walder can offer no medical or research support for the benefits of massage therapy. Several years ago, he underwent six months of chemotherapy for Hodgkin's disease, which had metastasized into his bone marrow. "I went for several massages," he recalls. "Believe me, in the midst of that much pain 'merely feeling good' is a most inappropriate phrase. I don't know what it did for my medical condition, but I can assure you that it certainly lifted my mental and emotional condition immensely."

The DOS program Non-Medical Pain Relief, in the forum's Library 7, "Chiropractic," as PAIN20.ZIP, shows how to apply a variety of massage techniques to common, everyday situations.



BRIAN BEHNKE

Easing All-Natural Adversity

Earthquakes, floods, tornadoes, hurricanes and even summer thunderstorms all have the power to knock you right out of business. If disaster strikes and you lose equipment and data, chances are it's your data that is most important to you and the most difficult to replace.

Plan ahead and prepare now for the unthinkable. Iomega Corp., manufacturer of the Iomega Bernoulli drive, offers these 10 suggestions to prevent

data disaster:

1. Regularly back up your hard-disk data onto a diskette or tape drive.
2. Add high-capacity, high-performance, removable storage to your system.
3. Use an uninterruptible power supply in case the electricity goes out while you are using your computer. The UPS will power your system long enough for you to shut it down properly.
4. Install a surge protector

to condition the power lines and protect against a potentially damaging spike of electricity.

5. Register your software with the manufacturer and keep backup copies in a different geographical region. Store the original disks and manuals in a safe place.

6. Copy critical data more than once and keep it in multiple places.

7. Keep your computer in a safe place. What objects are likely to fall on it? Is the desk solid?

8. Fasten the computer to the desk.

9. Purchase quality computer hardware designed to perform under duress.

10. Purchase insurance. Make sure you fully understand your coverage in the event of a disaster.

For more information, contact Iomega in the PC Vendor E Forum (GO PCVENE), Section 3, "Iomega Corp."

The Road to 'A-ha!'

Few forces of nature have as much impact as the brain-storm. But not all brainstorms are created equal, and there's a big difference between a successful entrepreneur and your basic entreprenerd.

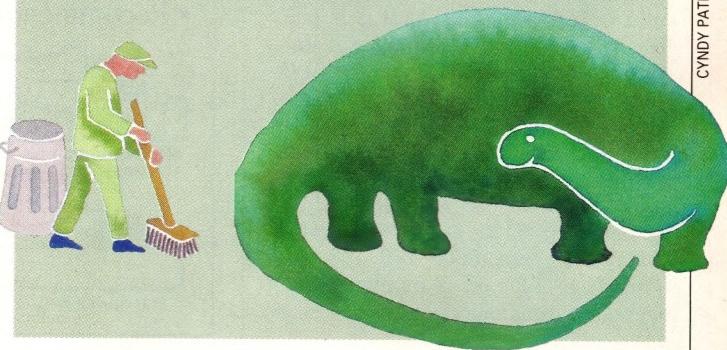
Library 6, "The Garage Workshop," of the Ideas, Inventions and Innovations Forum (GO IDEAS), contains several files to help creative types get the most out of their brainstorming sessions. IDEAS.TXT reviews brainstorming software, HDOT.TXT presents some ground rules for brainstorming and NAMS.TXT describes some seemingly unorthodox exercises actually used in the naming of Pepsi Max. (Sample: Get the participants to talk about what they dreamed of as children; it'll loosen them up.)

Here's the Real (Old) Poop

The guy checking into the Dinosaur Forum (GO DINO) clearly felt a little sheepish. Was a paleontologist friend of his putting him on, he asked, when he said that scientists regularly dig up the fossilized remains of, uh, dinosaur "doo"?

Yep, it's true—and according to forum members, there

are paleontologists who specialize in studying the stuff. It goes by the much more dignified name "coprolite," and once it's been ground up and analyzed, it yields useful information about a creature's diet and lifestyle. (We don't even want to imagine what the paleontological pooper-scooper looks like.)



CYNDY PATRICK

CompuServe Mexico Opens; U.K. News Goes Basic

CompuServe Mexico, offered through an affiliation arrangement with Infoacces S.A. de C.V., is now open in Mexico City to provide CompuServe members in Mexico with local support, local-currency billing and low-cost access via the CompuServe network. Members in Mexico City can log on to the CompuServe network at modem speeds of 300 to 9600 bps; the communications surcharge is \$8/hour, plus regular connect-time charges. CompuServe Information Manager users can use the CompuServe connect script to access the Information Service. If you use other communications software, GO LOGON for log-on instructions. Office hours are 9 a.m. to 10 p.m. Monday through Friday, 10 a.m. to 2 p.m. Saturday. Call Customer Service at (+52) (5) 629-8191; Membership Sales (+52) (5) 629-8190.

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Members can now access real-time local and international news in French, provided by the Associated Press France (GO APFRANCE). The Associated Press France en Ligne news categories include Headline News, Financial, Arts, Culture, Television, Sports and Social Events.



The Australian Associated Press (GO AAPONLINE) provides continuous local Australian news.

Members can browse news highlights relating to Australian events, weather, sports and business.



Another German-language service is now available on CompuServe. WordPerfect software users can access the WordPerfect GmbH Forum (GO WPGER) to discuss product issues, solicit help and exchange ideas with other users. WordPerfect support staff monitor the message sections to answer members' questions. The forum's libraries contain downloadable printer drivers, macros and product information.



DTP ASAP: Learning Design in Offline Seminars

As desktop publishing becomes less the domain of professional graphic artists and more the daily responsibility of everyone from teachers to technical writers, many are seeking to learn the basics of design. While the Desktop Publishing Forum offers help online every day, CompuServe members also can take advantage of hands-on, in-person workshops frequently led around North America by the forum's sysops.

Sponsored by the Graphic Communications Association, Brad Walrod's two-day, advanced QuarkXPress Unleashed seminars will be presented 25 times this year in 22 U.S. and Canadian cities.

John Cornicello's Thunder Lizard Productions offers two-day, classroom-style conferences in PageMaker and Photoshop that are taught by a team of six desktop publishing professionals.

The Newsletter Factory staff of Thom Hartmann, Dave deBronkart and Skye Liminger teach The Newsletter Seminar, a daylong workshop on planning, designing, writing and editing newsletters.

Kathleen Tinkel serves as featured speaker at various U.S. conferences, sharing her expertise on the fundamentals of desktop typesetting, working with service bureaus and graphic design.

The sysops are convinced the Desktop Publishing Forum is better and more informative for its members because the sysops teach workshops, which broaden their knowledge base so they can offer online help more effectively. "I get all sorts

of questions from my students. When I can't help, I often sit back and listen to another student's solution, thereby learning more myself," says Walrod. DeBronkart says being in the classroom gives him a better sense of the "street reality" of newsletter publication.

To learn more about the workshops, including scheduling, consult the Desktop Publishing Forum (GO DTPFORUM).



KRISTEN MILLEA

Is 'Green' Just a Dream?

Energy-efficient computers and peripherals are the rage. But can shoppers recoup a power-thrifty product's higher price through reduced energy bills? Some CompuServe members are skeptical.

Norm Reitzel, a member of the IBM Hardware Forum (GO IBMHW), says energy efficiency is "just a 'green' buzzword." He notes that going from a 230-watt, old-style IBM PC-AT to a 90-watt energy saver means the user will conserve 1 kilowatt-hour for every seven hours of PC operation. "Where I buy power [San Antonio, Texas], the daytime cost is 17 cents per kWh, so the saving is roughly 25 cents per day for a 10-hour day. If, like many programmers, I put in seven-day workweeks, then my savings amounts to \$1.75 per week, \$7.50 per month or around \$90 per year."

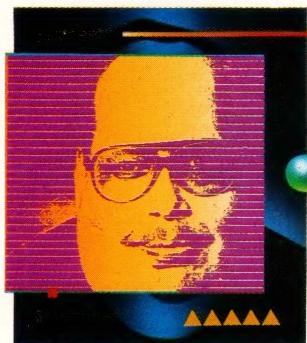
That's not very helpful when one considers that energy-efficient PCs cost a few hundred dollars more than standard models and are likely to become obsolete within a few years. But Reitzel adds that many users want to buy an energy-efficient PC as a matter of conscience.

"I wonder if energy efficiency is simply being used as a 'feel good' sales tool to promote consumption," says Jeff Segawa, a member of the Earth Forum (GO EARTH). He points out that while energy savings is a noble goal, manufacturers ignore that the manufacture of plastic and metal computer enclosures, keyboards and other parts also consumes energy. "A person in the market for a new computer should consider energy efficiency," he says. "But the person who already owns a system might want to consider updating the existing system."

James Haas, a member of the Computer Consultants Forum (GO CONSULT), says it is a question of conserving resources. Rather than asking whether to buy an energy-efficient computer, he says, "a better question is 'Should I leave my PC on all of the time?'"

Behind the Screens

with John Edwards



Crazy, Mazy Internet

So you want to learn about the Internet? Great! Let me help you.

The first thing you should understand about the Internet is its name. "Inter" means "between"; "net" means, well ... "net." So when you're using the Internet you're between nets. And, needless to say, between men in starched white uniforms.

Notice, by the way, that we

refer to the system as "the Internet," not just plain ol', glad-to-meet-you "Internet." The reason for this is simple—just ask any fellow member of the CompuServe Information Service or some of the guys who hang out at Radio Shack.

The Internet is full of useful things, such as e-mail messaging, mailing lists and news groups. But the only important thing you have to know is that the message header must always be longer than the message itself. Messages that are longer than the header will be returned undelivered to the originating party with an even longer header—a double-header perhaps. Many Internet users take advantage of a dedicated-header hard disk (DHHD).

The Internet is full of useful databases, particularly if one follows the latest doings of Al "Grandpa" Lewis or the Plattdeutsch Studies department of Eastern New Mexico State University. There's also a

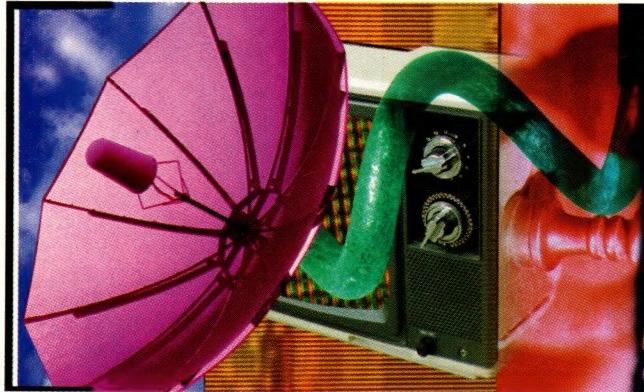
super-neat open-ended discussion on the music of Perry Como.

Many people feel that the Internet is hopelessly complex. This is a gross exaggeration. Incredibly complex is a more accurate assessment. Actually, the Internet is no more difficult to fully comprehend than, say, life.

Some observers have compared the Internet to the proposed National Information Infrastructure "Information Superhighway" and Easy-Off-Easy-On Fuel Stop (NII-IS"EOEOF). This is appropriate, since the Internet was designed by a team of government bureaucrats on leave from writing environmental and flip-top safety regulations.

So now you've learned all about the Internet. Next month: nuclear fusion in your bathtub.

For more BTS gems by John Edwards, GO OLT-130. Edwards is a contributing editor of CompuServe Magazine. His CompuServe User ID number is 70007,412.



Dishing onto the Data Highway

Will next-generation cable TV services featuring 500 channels, interactive shopping, movies-on-demand and other state-of-the-art innovations leave receive-only satellite viewers in the digital dust? Not necessarily, according to the members of the Consumer Electronics Forum's (GO CEFORUM) Section 8, "Satellite Systems."

Many people won't have the opportunity to receive interactive cable in the near future.

"There are vast areas of the United States that will never see a coax or fiber-optic cable snaking its way from the street to their TV," says Fred Hoffman, a forum member and editor of *Satellite TV Week*, adding that cable passes by only 64 percent of all households in California, 47 percent in Arizona and 46 percent in Texas. "Here in California, I know of no plans for cable expansion into the uncabled areas, due to

changes in FCC pricing requirements, which have curtailed many cable company plans for expansion and upgrades."

Member Chris Donnelly believes that some satellite-TV enthusiasts will tap into interactive cable as an enhancement to their home entertainment systems. "The interactive aspect will be seen as a glitzy new enterprise," he says. "Interactive cable will certainly not be cheap. Those of us who have dishes will probably not hook up to cable just for its newness."

Satellite-TV viewers already possess a large degree of interactivity—years ahead of most cable subscribers. "We can choose what channels come into our homes instead of getting a lump sum of networks pouring in," says forum member Marty Mankins. "Those of us with satellite dishes are very happy with what we get now."

To learn more about satellite TV, visit the Consumer Electronics Forum's Library 8, "Satellite Systems," and read the file SAT.FAQ.

I'll Take 'Trifling Minutiae' for \$300

To compete successfully on *Jeopardy!*, it helps to be plugged into information. So it's not surprising that a number of CompuServe members have journeyed to Los Angeles to stand face-to-face with fame, fortune and Alex Trebek.

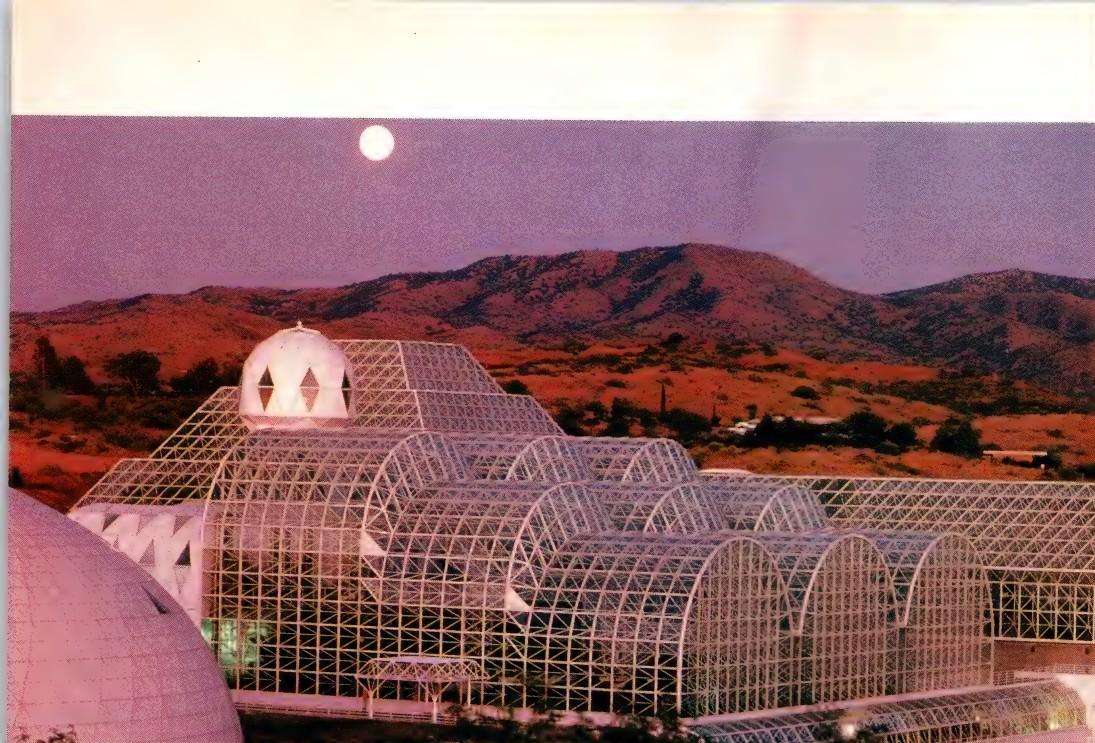
Member Seth Davis appeared on *Jeopardy!* in September 1991, winning four games, \$53,801 and a dishwasher. "Unfortunately for me, that was a big year for winners, and I didn't make the Tournament of Champions," he says. Davis feels that CompuServe and *Jeopardy!* are a perfect match. "Being an active CompuServe member fits right into the *Jeopardy!* gestalt: exchanging ideas with bright people on any number of interesting topics."

Member Ellen Ripstein, who appeared on the show in April 1991, didn't fare quite as well. She lost her one and only game. "Categories such as 'Cattle' didn't help. I wasn't about to guess how many compartments are in a cow's stomach," she says. Ripstein wrote about her experience in a brief article, "I Lost on *Jeopardy!*" It's available in Library 1, "Backlot/Programs," of the Entertainment Drive Forum (GO EDRIVE), file JEOPAC.TXT.

Member Robert Slaven is a certified *Jeopardy!* superstar. Slaven appeared five times in March 1992, returned for the 1992 Tournament of Champions and then appeared on the 10th Anniversary Championship in December 1993, winning a total of \$63,202. As many armchair contestants have suspected, it is indeed easier to play at home than in the studio. "You're not worrying about the button and, at home, you don't have all those bright lights and cameras," Slaven says.

Monitor

Contributors: Cathryn Conroy, John Edwards, Lindsay Van Gelder



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Biosphere 2. A sealed, small-scale replica of our own ecosystem. The long-term habitat for a new breed of scientific researchers. What new techniques discovered there will influence the way other worlds are explored? How will the wonders discovered inside the facility improve the way we live in the outside world?

Free IQuest Database Directories available online. Updated monthly, electronic directories indexed by subject and by database name are available free in the CompuServe Help Forum.

To get your free directories, GO HELPFORUM and download the files IQSUBS.TXT and IQDESC.TXT from the Forum's Help Library.

by John Edwards

MULTIMEDIA Turns On

FEATURE

CM's Cover Story:
Multiuses of the Sight-and-Sound Machines

▼
How Good Are Upgrades? p. 15

▼
Multimedia Programs and Files, p. 18

► CompuServers find a myriad of uses for the sensory splash of high-res, hi-fi CD-ROM PCs.

When future historians look back at the computer revolution, 1994 may very well stand out as the year in which multimedia computing finally "arrived."

In homes, schools and businesses of all sizes, computer-linked CD-ROM drives, stereo speakers and high-resolution color displays are becoming as commonplace as keyboards and modems, and CompuServe members are putting them to use in a multitude of ways. "The future world of mixed video and text, computer music and graphics that experts were forecasting several years ago is here today," says Nick Arnett of the Multimedia Forum (GO MULTIMEDIA).

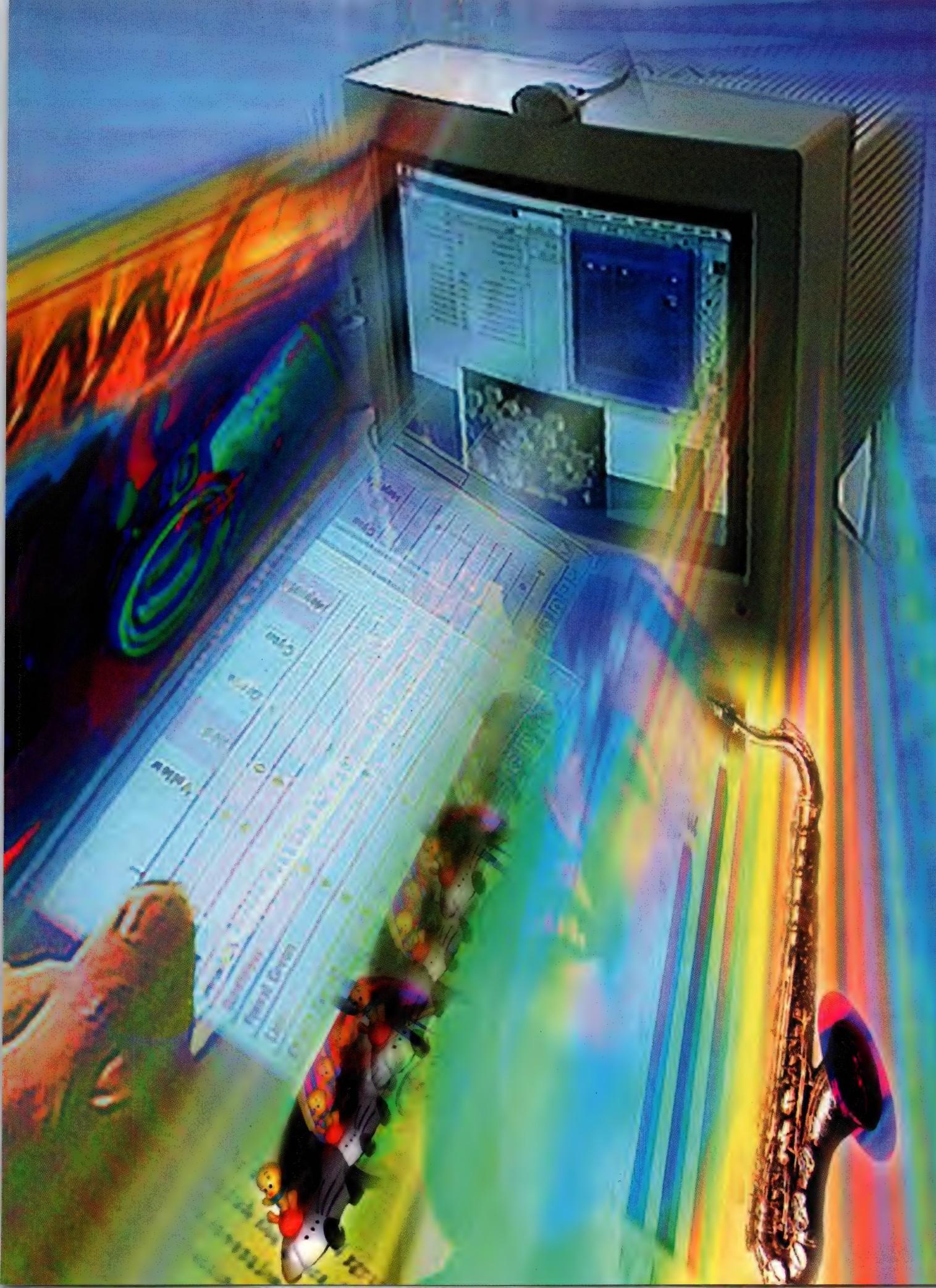
Dataquest Inc., a market research company in San Jose, California, reports that shipments of multimedia PCs grew an astronomical 1,833 percent worldwide between the end of 1992 and the start of 1994, from 127,000 to 2.46 million units. During the same period, sales of PC multimedia upgrade kits increased 59 percent, from 928,000 to 1.47 million units.

Why the surge? According to Arnett, there are several factors driving multimedia's recent growth. Among these are the lower prices of multimedia systems, a greater availability of multimedia products, media-generated publicity about the field and, perhaps most important, the relentless evolution of computer technology. "We're seeing a convergence of forces

that is transforming all aspects of the computer industry into multimedia computing," he says. "People are no longer satisfied with just text and crude graphics. They want sound, high-resolution graphics, video and all the rest. They'll get it by upgrading their current system or buying a new multimedia computer."

Most people decide to get into multimedia after reading about the technology in magazines, seeing it demonstrated on television or getting recommendations from friends, according to Roy Smith, president of Turtle Beach Systems, a York, Pennsylvania-based multimedia products manufacturer. He notes that while many new users are initially "kind of hazy" on what the technology can do for them, most are able to find entertaining and productive applications almost immediately after installing their systems. "The ability of multimedia to mimic real-life forms of education, gaming, business, art and everything else is what makes it so great. For example, once parents see that their system is actually helping their kids read faster, or that it can enhance home entertainment, they're usually sold on multimedia technology."

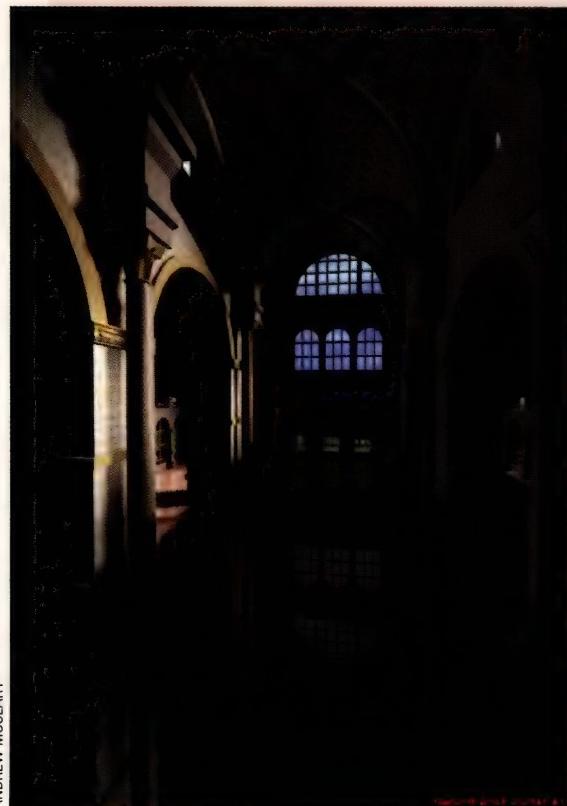
Multimedia, according to its dictionary definition, is information presented in a combination of text, graphics, video, animation and sound. But the technology comes in various guises. On the hardware end, multimedia can exist on platforms as diverse as IBM PCs and compatibles (both DOS- and Windows-based models), Macintosh systems



Shipped Disc: The Birth of a CD-ROM

Creating CD-ROMs is the latest technological challenge to capture the imagination and skills of programmers extraordinaire. While few can afford or have the diverse technical skills needed to make a CD-ROM as a solo operation, team efforts in companies large and small are pushing this new technology to its limits.

A CD-ROM has 550MB or more of interactive, animated, motion-picture and musical data that make columns of text come alive. Simple for the end user to install and view, CD-ROMs may soon replace printed encyclopedias and major reference works as the medium of choice, especially as many new computers now include CD-ROM drives as standard equipment.



Tour of history: Basilica of Constantine

Creating a CD-ROM begins with an idea. Andrew McClary, an architecture graduate turned animator, used a CD-ROM to re-create what ancient buildings would have looked like in their prime in his CD-ROM *Exploring Ancient Architecture* (Medio Multimedia). Hugh McNally, a software project engineer, was part of the team at Grolier Electronic Publishing that turned the company's acclaimed encyclopedia into a multimedia extravaganza in *The New Grolier Multimedia Encyclopedia*. In addition, Grolier created *The Guinness Multimedia Disc of Records* and *Prehistoria*, a multimedia encyclope-

dia of prehistoric animals.

The medium also is ideal for scholarly works. Eric H. Sigward of Jackson Heights, New York, is producing a literary CD-ROM containing the writings of theologian Cornelius Van Til, which have never been collected into one work.

After the basic research is conducted and the rights to the data (including text, movies, pictures and music) are secured, software is designed to present the material in an exciting way. Using '486 or Pentium computers with as much as 3GB of storage, the action is scripted and storyboarded, the database is coded and the graphics are drawn. The package is tested and tested again—a laborious process for 550MB or more of data. Documentation and online help are written, and the CD-ROM master is made. Large companies such as Grolier create the masters in-house with CD-ROM "burn units" for prices that now are around \$5,000. Smaller companies, such as McClary's Graphic Alchemy Productions Inc., send masters to a service bureau for fees of \$100 to \$200. After more testing, the CD-ROM is duplicated and mass-released with retail prices ranging from \$50 to \$100.

Time needed to create a CD-ROM varies widely. McClary, who operates his company with his wife using a free-lance staff, takes about six months to complete a CD-ROM. Sigward, who is doing this as a labor of love and contracting out much of the work, will take about three years to complete his project. It's a pricey venture, usually costing from \$25,000 to \$100,000 to produce each CD-ROM title. Often, the most expensive piece of the project is buying the rights to the material.

Publishing and marketing opportunities also vary: Sigward will self-publish his CD-ROM and market it himself primarily to theologians and scholars. McClary sells his work to Medio Multimedia, which publishes and markets it, paying him royalties on sales as a book publisher pays an author.

Although it's still not feasible to create a CD-ROM in your home office, the technology is advancing quickly and may soon offer more affordable opportunities for home users. Grolier's McNally predicts that once prices of CD-ROM burn units fall to less than \$1,000, computer users will purchase them to burn CD-ROMs off their hard drives as backup discs.

—Cathryn Conroy

(with traditional Motorola or newer PowerPC microprocessors), Amiga and Atari computers.

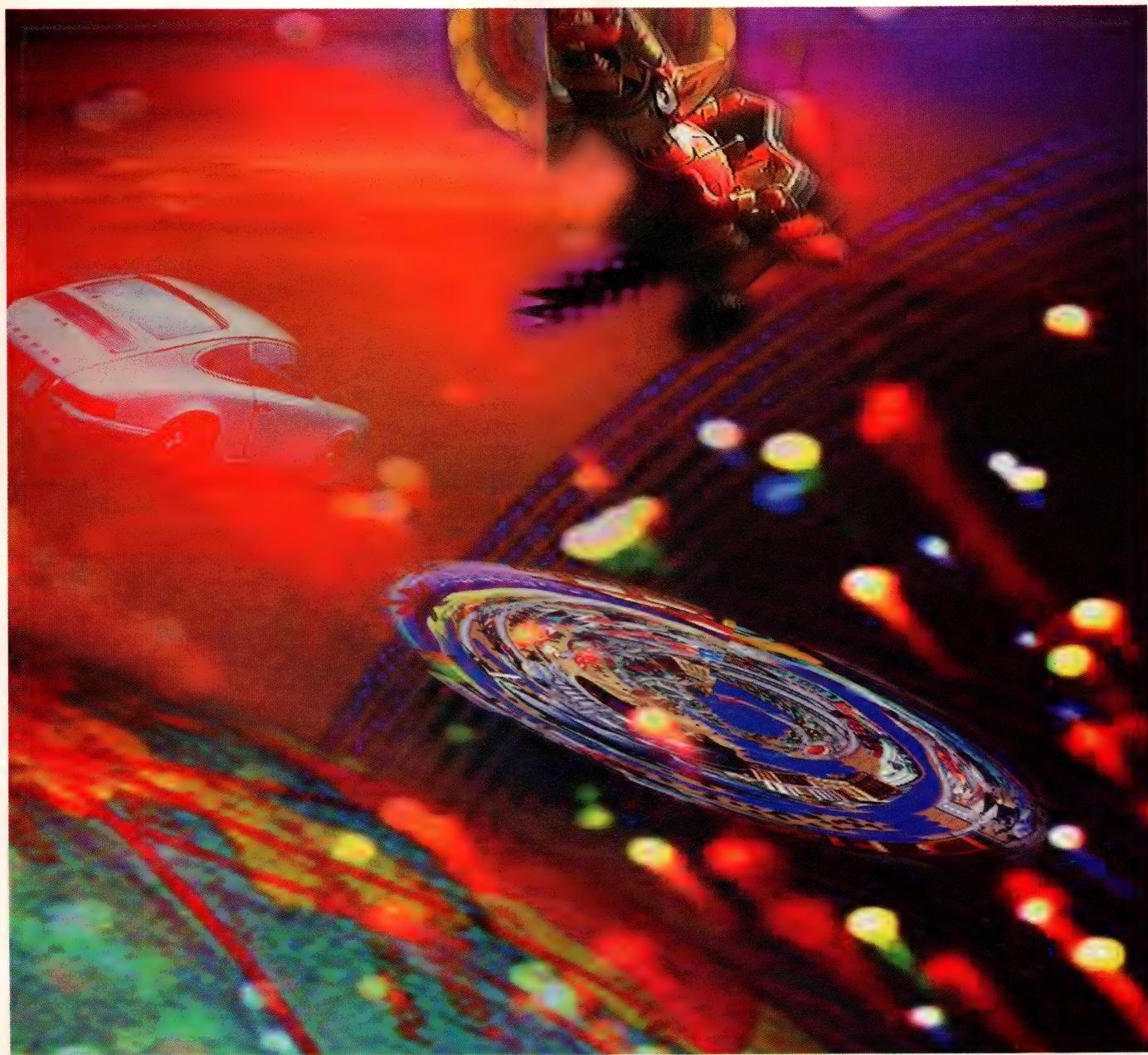
Multimedia computer software also is found in various formats. In the medium's earliest days, products were provided on standard magnetic diskettes (which are handy but lack storage capacity) or video laser discs (which have plenty of storage capacity but are inconvenient to handle). Today, nearly all multimedia programs are distributed on computer-readable compact discs, commonly called CD-ROMs. The same silver-colored discs that edged LPs out of the music market now are being used by millions of computer owners to retrieve 550MB of computer information, or even more data when special compression techniques are employed.

The multimedia field is being driven by hobbyists and home users. As a result, entertainment and educational games software constitute a large segment of today's multimedia software market. Multimedia games range from standard "shoot the aliens" fare to mind-stretching programs that aim to place their users in "alternative worlds." But what factors combine to make a good multimedia game program? "If it has more than two buttons to push to get the animations and screen shots rolling, it's a major breakthrough CD-ROM game," quips Steve Wartofsky, editor of *Strategy Plus Magazine*, a publication for computer gamers.

Wartofsky, who regularly visits Section 16, "Games Magazines," in the Gamers' Forum (GO GAMERS), points out that a number of multimedia games are impressive visually and aurally, but they don't have a lot of "play value" to them. "Many games are being 'CD-ROMified,' which means more sounds and graphics are linked into an already solid diskette-based PC or Mac game," he says. "I think you'll notice the difference in the style of actual game play in such designs, compared with CD-ROM-original designs."

One of Wartofsky's favorite CD-ROM games is *Myst*, created by Cyan Inc. and published by Broderbund Inc. The software uses more than 2,500 color images to form a mysterious island world. Wartofsky notes that the software transports the traditional adventure game experience into the realm of virtual reality.

If multimedia practitioners and fans aren't playing games, how else are they using their graphic, video and sound equipment? Gary Alston, president of Alston Soft-



ware Labs in Modesto, California, and a member of the Association of Shareware Professionals/Shareware Forum (GO ASPFORUM), states that the technology can be tapped to develop powerful, easy-to-use business, home and personal-productivity software applications. "As a shareware author, I've created some Windows programs specifically to use multimedia capabilities," he says. Software Lab's Collect! program, for example, is a data manager that allows users to store pictures and sound as well as text information. It can be used for tasks ranging from home insurance inventory surveys (complete with pictures and sounds of home appliances that prove they work) to bird-watching (the user can record the sound of the bird and a picture of it in the same data record).

Multimedia is also revolutionizing the family photo album and home movie show.

FEATURE

Fernando Gelbard, a Los Angeles-area businessman and Argentina's former ambassador to France, enjoys viewing snapshots presented through Kodak's Photo CD technology. He puts his granddaughter's pictures

on CD-ROM, crops and prints them for the family's amusement. Gelbard also has placed his travel and official photos on Photo CDs. "It's a great way to save them and watch them from time to time," he says.

James Frazier, a member of the Multimedia Forum from Pacific Palisades, California, also prefers to serve up his personal memories in a multimedia style. He recently used Macintosh QuickTime software to create a two- to three-minute slide show movie (including music) of his family's Christmas get-together. "The whole thing fit on a single high-density diskette," he notes. "I sent it to all of the people in the family who have

Macs." The images were captured from video that Frazier shot with his camcorder and then captured on his Mac. He used about 40 color images, each approximately 320 by 240 pixels in size.

The technology also has its practical benefits. "Our niece was writing a school report about Christmas. Since she already had a copy of the QuickTime movie, I helped her cut and paste images from it to her report, which she then sent to a color inkjet printer," Frazier says. "She ended up getting the highest grade in her class."

Less on the practical side and more on the fun side of multimedia photo capability, Mike O'Connor of Huntington, New York, author of CompuServe Navigator™ for the Macintosh and sysop of the Macintosh Multimedia Forum (GO MACMULTI), applies state-of-the-art Hollywood technology to wedding photography. With his camcorder, he takes separate head shots of a bride and groom, digitizes the

Recognizing a CD-ROM Winner

With thousands upon thousands of CD-ROM titles now flooding the multimedia market, how do you separate the gold from the dross, especially since published reviews are scarce and vendors' promises aren't exactly unbiased? It isn't easy, but the members of CompuServe's various multimedia-related forums have devised some guerrilla strategies for locating the best CD-ROM software.

"I almost never buy something just by looking at the box—it tells you nothing and there's too much junk out there," says Rick Thornquist, an Amiga Arts Forum (GO AMIGAARTS) member from Vancouver, British Columbia. He notes that buying blind can be both dangerous and costly. For example, he bought *Return to Zork* and didn't like it. "I read a review shortly afterward and also visited the Gamers' Forum (GO GAMERS)—both said the software was only OK at best. On the other hand, both the magazines and Gamers' members recommended *Day of the Tentacle*—a great game," he adds.

"Magazine articles on CD-ROM software help a lot in picking out the good and the bad titles," observes Jason Mezzacca, a multimedia games enthusiast and high school student who's a regular in the Gamers' Forum. "The text on the box is sometimes an influence, but I've usually

decided whether I'm going to buy it or not before I have the box in my hand," he says.

Mezzacca, who lives in Madison, New Jersey, agrees that magazine articles help in sorting through the good versus the bad CD-ROM titles, but he relies primarily on word of mouth and the opinions provided by his fellow CompuServe members. "People will see the software demonstrated at a show, use it personally and then spread the word about it," he says.

Rich Harper, president of the Association of Shareware Professionals, a trade group that represents some 1,700 shareware developers worldwide, likes to shop for CD-ROMs that contain a wide selection of products. "I look for CD-ROMs that have a large percentage of 'current' software titles on them, since some collections aren't as frequently updated as others. I also tend to shop for titles by publishers that have produced other CD-ROMs that I liked."

Harper says novice CD-ROM users shouldn't fall prey to the "bigger is better" pitch made by some software publishers. He notes, "I'd rather buy a CD-ROM with fewer titles and software that's current than buy a 'shovelware' disc that's promoted with the headline '4,500 TITLES —660 MEGS!!'"

—JE

pictures by plugging the camcorder into his Mac Quadra 840AV, then runs the still-video pictures through a morphing application such as Morph by Gryphon Software. "I end up with a QuickTime movie that shows one person slowly changing into the other. It's fun to watch the change and, by looking at the middle of the movie, you can guess what the children might look like," O'Connor says. For extra special effects, he often further processes the movie with a QuickTime movie editor. He digitizes "their song" and uses it as the soundtrack with the still pictures and morph movie. "It makes a cool high-tech wedding gift."

Multimedia technology is also being used to expand minds as multimedia instruction helps students inside the classroom, at work and at home. Jenkintown, Pennsylvania-based Cubic Media developed the Video Linguist, a CD-ROM-based foreign-language instruction program currently in French and Spanish that teaches conversational language skills by using clips taken from TV programs in the language studied. Vice President of Sales Guy Henninger, a regular in the CD-ROM Forum (GO CDROM), says the software "lets the student, in the privacy of his or her own home or dorm room, practice pronunciations using a microphone." The Video Linguist's recording capability allows a user to compare his or her skills to the native voice of the video.

With some imagination and digital elbow grease, multimedia can help students get a leg up on the competition. The technology can be used, for example, to create an interactive presentation that replaces the time-tested term paper or book report. Student Joe Ebel of Stevens Point, Wisconsin, used his multimedia system to create a presentation based on the movie *The Player*. He employed Macromedia's Action! to lay out the presentation and used the audio CD of the movie soundtrack. Ebel placed the audio CD in the CD-ROM drive and had still pictures from the laser disc version of the movie captured by a service bureau. "I also digitally recorded sound clips from the videotape as well as short clips that I played on a MIDI keyboard," he says.

The presentation was submitted as Ebel's final assignment in a film appreciation class and earned him an A. "You'd click on an image to explore the film score for that portion of the film. Sound was presented either from the audio CD, from the actual film soundtrack or from MIDI mini-performances of key elements of the music," he says.

Minds also are being expanded at home as CompuServe members use multimedia technology to intellectually challenge their children. Multimedia Forum member Dave Felder of Rockaway, New Jersey, creates multimedia "books" for his 4-year-old son.



STUART MCCALL

Selects CD-ROMs with member input and reviews, not promises on the package: Thornquist

"My son is infatuated with rockets, so I put together a 12 'page' electronic book about the space shuttle. I gave him 'Forward' and 'Reverse' buttons for changing slides. I recorded the text and gave him 'Read Me' and 'Shut Up' buttons so he could control my narration." Felder used Asymetrix

Corp.'s Compel presentation development software to create the storybook. The graphics are 256-color Windows BMP files. The sound is recorded in 8-bit, 22KHz WAV files.

Swaying the minds and hearts of potential clients and employers is a task that's faced—and often dreaded—by sales representatives, marketing managers, public relations and advertising professionals, and job seekers. Multimedia technology can add pizzazz to what would be an otherwise mundane

FEATURE

printed presentation. Member Joe Mack, a professional illustrator who lives and works in Indianapolis, Indiana, uses multimedia technology to drum up new work. His

Macintosh-based Interactive Employment Jobseek Module functions as a "bodyless agent" that seeks out the job

opportunities lurking in the various nooks and crannies of the Internet. It also allows users to send multimedia-based information on diskette directly to prospective employers.

Mack has placed his entire portfolio and résumé in an interactive, graphical format, including sounds, animation and an interface on a single high-density diskette. "Other people have put together interactive portfolios and the like before," he notes, "but none have taken the approach of having an engag-

ing, entertaining, game-like interface with looping sounds, ray-traced animation and images, a printable résumé, cool interactive buttons and an integrated, easy-to-use, graphical user interface that looks like a cross between a Nintendo GameBoy and a Newton MessagePad." To check out Mack's presentation, Macintosh users can visit the Multimedia Forum's Library 5, "Macintosh/Apple II," and download the file JOBSEE.SEA. (For more information on electronic résumés, see "A Digital Curriculum Vitae," on p. 33.)

Using Macintosh-based systems, NPiX Interactive, a multimedia development company in Champaign, Illinois, creates interactive promotional movies. "The interesting thing about these movies is that they fit on a single diskette, and we are using them to

What to Know About Multimedia Upgrades

The rewards of upgrading your desktop computer to today's multimedia standards are undeniable. Adding a CD-ROM drive to a vacant bay means you have access to video, audio and text storage, up to 550MB or more of it. A sound card brings music and voice to a machine whose previous audio capabilities included little more than beeps. The right SCSI card can be used not only for your CD-ROM drive but also for tape backup systems and optical drives.

Numerous manufacturers have joined the multimedia bandwagon, offering to eliminate installation hassles by selling kits whose components are tested to work together; the prices of some of these have dropped below \$500. Working with a Creative Labs upgrade kit, Beavercreek, Ohio, resident Jon Woolf had little trouble. "Installing it was simple," he says. "Plug in the card, install the drive, connect the cables and run the setup programs. Everything worked on the first try."

But not all users are so lucky. Tom Marchessault of Gaithersburg, Maryland, calls his attempt to upgrade "a story of woe and travail," one that included problems determining and setting the correct IRQ and port assignments, having to locate the necessary software drivers and crashing his hard disk.

Two CompuServe forums, the Multimedia Forum (GO MULTIMEDIA) and the CD-ROM Forum (GO CDROM), are filled with questions and answers from those making the upgrade. Brookings, South Dakota, resident Brian K. Piersel, for example, hopes his fellow Multimedia Forum regulars will discuss compatibility. Piersel needs a sound card now and plans to buy a CD-ROM drive later. He wants to make sure that the CD-ROM interface on his sound card will be compatible with the drive he eventually buys.

If other users can't answer a question, often the forum's libraries can. A new Multimedia Forum library section, "FAQ's/Help Files," has been established to focus on such issues. Sysop Jose J. Ortiz reports that the forum's flood of questions has led to a collection of files on everything from sound cards to which CD-ROM drive to buy, with stops in the field of audio and video file formats, file compression schemes and recommendations on speakers. Careful reading now can save time (and money) later.

Ortiz offers clear advice for those contemplating the upgrade. A multimedia computer requires at least a 200MB hard drive, along with 8MB of RAM (upgradable as necessary to 16 or 32MB). For the best view on your screen, Ortiz recommends Super VGA screen

resolution (1,024 by 768) in video card and monitor. He also believes in sticking with established companies when you plan the upgrade. "Three out of five computer users who buy a kit need technical support from the manufacturer. It's best if the brand you bought has a good support hotline or, even better, a good support forum on CompuServe."

Hardware decisions are critical. Any upgrade kit will contain a CD-ROM drive, a sound card, loudspeakers and the necessary cabling to connect them to your computer. Also included will be installation software and, frequently, a library of CD-ROM titles at substantial savings. An empty motherboard slot and drive bay are required unless you opt for an external CD-ROM drive, which costs somewhat more.

Making the correct choice of drives has become an obsession with Steven Bussard of Pasadena, California, whose study has convinced him that buyers overlook the size of the cache when they make their purchases. "Most of the earlier drives have only a 64K cache," Bussard says, "while the smoother ones have a 256K cache." Bussard's research has narrowed his choices to the Sony CDU-561, the NEC 3xi and the Chinon CDS-535. Ortiz cautions, however, that triple-speed drives such as the NEC 3xi are new enough that appropriate driver software has not been written for them. The safest choice is a double-speed CD-ROM drive.

Based on user comments in the various forums, the prospective buyer also should plan on getting a 16-bit sound card; 8-bit cards are obsolete. According to James Bell Jr. of Beaverton, Oregon, the SoundBlaster series has established a standard, although other brands can use software emulation to work compatibly with multimedia applications. Bell's overview of basic multimedia concepts is found in Library 16, "FAQ's/Help Files," of the Multimedia Forum as PART1.ZIP.

The biggest headache for the potential installer: working out conflicts between system resources such as interrupts and port addresses. Good installation software can help, but the process still can mean trying different combinations of drivers and resident programs. "Don't forget to read the manual," says CD-ROM Forum regular Jon Woolf, who found a way to conserve system memory and still make his drive work by careful reading of his documentation.

—Paul A. Gilster

replace business cards and brochures," says NPiX President Patrick Ortman, a regular in the Multimedia Forum. "We feel that these 'do-it-yourself' interactive projects more completely and creatively explain companies than any printed material."

NPiX's movies are created using Apple Computer's HyperCard and Macromedia's Macromind Director multimedia authoring software. "We do it all internally and have received a good response from clients," says Ortman. "We now are looking at the possibility of internally creating CD-ROMs of specially tailored presentations for clients who would like to see and hear prototypes of their projects throughout the development cycle."

Multimedia is starting to influence the designer's drafting process. Macintosh Multimedia Forum member Jonathan Stoppi of London-based Qualum Research is one of the new generation of leading-edge designers blending multimedia and virtual-reality technologies to generate 21st-century building plans. Stoppi is producing run-time virtual-reality models of property that clients can explore in real time on their Macs without the need for other software. "So far, I

have produced models of individual apartments, a new perfume hall at Selfridges [a major London department store], the offices of Canon Research Europe and a whole new development for 60,000 people in Kuala Lumpur, Malaysia," Stoppi says, adding that each model takes up only 400K to 650K and includes a credits screen with images and text of the client's choosing.

The world of fine art also is beginning to feel the impact of multimedia technology through a new generation of artists who feel as comfortable with a keyboard and display screen as with a palette and canvas. Jeff Horowitz, a New York-based CD-ROM Forum member who describes himself as a "digital fine artist," produces "audiovisual art" (sort of a highbrow music video) that combines colorful, free-flowing digital images with music supplied by a musician friend. "My major goal as a digital artist is to produce art that is truly unique to digital-based media and could not possibly be created using more traditional methods," says Horowitz.

His first creation was a free-form piece

titled *Ambient Dark Matter*. Coming in at just under four minutes in length, the work was created entirely with digital technology. The images were choreographed and then generated on a '386-based PC with a Truevision Vista board. The sounds were composed and produced through a slew of MIDI keyboards and effects units controlled with an Atari PC.

Unfortunately, when *Ambient Dark Matter* was completed in January 1993, Horowitz didn't know enough about CD-ROM technology to place the final cuts onto a disc. The piece was mastered onto a 1-inch video, with great care taken with the processing of the digital images onto an analog medium. Nonetheless, Horowitz notes that the work's overall quality "is exceptional to the general audience, but as a digital artist, I hate having to put up with the limitations of videotape." Horowitz is hoping that the information he is gaining in the CD-ROM Forum will allow his next work to be a totally digital creation.

But he adds that multimedia art can be an acquired taste. "Some people like it, some

Introducing CompuServeCD

Add music, graphics and full-motion video to CompuServe and what do you get? The new *CompuServeCD*, a multimedia CD-ROM extension to the Information Service that, in each edition, presents online services and resources in an exciting, eclectic mix of sound and vision.

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Personal Enterprise provides information on personal productivity, small businesses, work-at-home entrepreneurship, financial planning and desktop publishing.

Shopping offers a CD-style window on CompuServe's Electronic Mall, in a unique and interactive online shopping experience.

Entertainment provides a sampling of what's new in the world of music, movies and art, including interviews with movie stars and musical artists, and sneak previews of upcoming films and music recordings.

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New window to CIS: *CompuServeCD*



Software smart: *Technology & Trends*

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Mall. Eventually, links will enable users to download shareware.

Now available in a Windows version, *CompuServeCD* will be updated bimonthly until mid-1995, when new editions will be released each month. The minimum hardware required to run the Windows version of *CompuServeCD* is a multimedia personal computer (MPC 2 PC), Windows 3.1 or higher, 4MB RAM and a monitor with 640-by-480 resolution and 256 colors. (An MPC-capable IBM-compatible system will include a CD-ROM drive.) A Macintosh version will make its debut in early 1995.

Subscriptions to *CompuServeCD* are \$7.95 per issue, with a \$5 usage credit applied to participating members' CompuServe accounts, making the actual cost \$2.95 a month plus shipping charges.

For more information, consult *CompuServeCD Online* (GO CCD), which is free of connect-time charges (applicable communication surcharges still apply), or the *CompuServeCD Forum* (GO CCDSUPPORT).

—Cathryn Conroy

don't. I have found that with a fairly new type of art there aren't any established guidelines for evaluating the work. Thus, in the long run, it is hard to get people to actually know it's even out there."

Multimedia's influence on art extends far beyond the interests of artistic highbrows and serious music buffs. Dave Renneker of New Brunswick, New Jersey, for example, is using his multimedia system to create full-screen 2-D animated cartoons. "I've been plugging away at it for about five months, and a good chunk of that time has been spent trying to find the right hardware and software to do the job," he says, adding that it can be difficult to learn all of the ins and outs of multimedia production for those not employed in the field.

Renneker has picked up enough instruction and support from fellow members in the Graphics Developers Forum (GO GRAPH-DEV) to edge into the multimedia field as a professional, with an independent production studio called Commander Radish Studios. He recently finished the first music video for his animated lounge act, "Chuck Lucky and the Gentlemen of Leisure." Renneker uses Adobe Illustrator to create the characters and Adobe Photoshop to rasterize the lines, then brings the result into Autodesk's Animator Pro for the actual animating. The Animator Pro clips then are brought into Adobe Premiere to see how they fit the soundtrack. "I use Premiere because it gives me a specific frame playback rate," says Renneker, "so I can see what doesn't fit, calculate the frame additions and deletions, and move back into Animator Pro."

Multimedia applications often are used to add "atmosphere," in much the same way that a painting or music can make a room or office more livable. Many multimedia buffs use their systems to enliven parties or enhance romantic evenings by playing continuous graphics and/or music. But David Thomson of Torrance, California, a member of the Macintosh Multimedia Forum, chooses to use his sound-card-equipped PC to generate humorous, occasionally rude, sound effects at public events.

Each year, Thomson lugs his multimedia system to the local Farmer's Day Fair to provide audio accompaniment for the event's arm-wrestling contest. He steps past the nervous competitors, connects his computer to a professional sound system, and plays his collection of sound effects (oof, umph, aff) and intro music (tah-dahhh). Each key on the keyboard is preprogrammed to play a different WAV file. Thomson notes that the sound effects are enjoyed by both the participants and spectators and have helped to double the attendance at the nonprofit event.

Multimedia has reached a critical stage, according to Roy Smith of Turtle Beach Systems, who believes that the next few years will determine the ultimate direction the field will head in. He notes that multimedia technology has just barely reached the point where it can meet software developers'



dreams and users' expectations. "I see in the coming years, with the Pentium, PowerPC and other processors, that we'll have much more powerful systems capable of running programs that are faster, more detailed and more intuitive," he says.

Claude Leglise, director of Multimedia Marketing for Intel Corp., the Santa Clara, California-based microprocessor manufacturer, agrees that more powerful microprocessor technologies are the key to multimedia's future. He expects that a "standard" PC multimedia system at the end of 1994 will include a Pentium microprocessor, 16-bit sound card and a double-speed CD-ROM drive. Such a configuration "will immediately enable much more interesting software

with much more realistic experiences."

But despite the new capabilities, Leglise doesn't expect multimedia computer prices to change over the short term. "Right now, multimedia systems are priced between \$1,500 and \$2,500, depending on the configuration, and that shouldn't change," he says. Furthermore, while interactive cable services with high-definition television output eventually will come along to supplement mainstream multimedia computing, Leglise doesn't believe that such technology will replace the multimedia desktop computer. "I'd advise anyone to buy now," he says. "Why wait? You'll miss out on so much."

See list of multimedia forums and files, p. 18.

An Overview of Multimedia-Related Forums

CompuServe's multimedia-related offerings include the following forums, where you can find advice, support, software, utilities, discussion and more. For a complete listing of online multimedia areas, use the FIND command with MULTIMEDIA as the keyword. To search for support areas for products mentioned in the feature, type FIND and the company or product name, such as FIND MACROMEDIA or FIND QUICKTIME.

CD-ROM Forum (GO CDROM)—Discuss issues surrounding CD-ROM. Message sections and libraries cover new products, platforms, networking, drives and hardware, CD-ROM production and more. The forum also is the online home of SIGCAT (one of the largest CD-ROM users groups in the world) and the Optical Publishing Association.

CD-ROM Vendor Forum (GO CDVEN)—Get help from CD-ROM vendors, including Best Photo Labs, Bowker/Reed Electronic Publishing, Bureau of Electronic Publishing, Compton's NewMedia, Creative Multimedia Corp., Meridian Data Inc., Nimbus Information Systems, One-Off CD Shops Inc., Online Computer Systems Inc., QuickScan, Trantor Systems and ZCI Publishing Inc.

CompuAdd Forum (GO COMPUADD)—Get help using CompuAdd's multimedia system in Section 4, "Multimedia," where technical support staff answer questions, and in Library 3, "Multimedia," which contains drivers, sound output files and more.

Creative Labs Forum (GO BLASTER)—Find support for Creative Labs' SoundBlaster audio cards, CD-ROM drives, and VideoSpigot and VideoBlaster capture cards. Other message section and library topics include sound and music, OS/2, Windows NT, product updates and fixes and more.

Kodak CD Forum (GO KODAK)—Looking for help with Kodak CD products? Libraries contain Kodak-posted information about Kodak news, Photo CD and Writable CD, color management, image capture and more. Message sections are for discussion with other members rather than technical help from Kodak.

Macintosh Multimedia Forum (GO MACMULTI)—Discuss the Macintosh as a platform for multimedia development. Message sections and libraries cover beginners, QuickTime, video hardware and software, interface, sound, art, combining media, HyperCard design and more.

Media Vision Forum (GO MEDIAVISION)—Find support for Media Vision multimedia products. Message sections and libraries cover sound boards, video boards, multimedia kits and more.

Microsoft Windows Multimedia Developer Forum (GO WINMM)—Exchange information, tips and techniques about Micro-

soft Windows multimedia products. Message section and library topics include nontechnical service, MDK, Video for Windows, Viewer 2.0, WinSndSys Development, developer relations and third-party software.

MIDI/Music Forum (GO MIDIFORUM)

—Find assistance using Musical Instrument Digital Interface. Message sections and libraries cover equipment, platforms, composing and editing, recording and audio, controllers, sound cards and more.

MIDI A Vendor Forum (GO MIDIAVEN)

—Get help from MIDI product vendors including Turtle Beach, Twelve Tone, E-mu Systems, JLCooper, YC/Kurzweil, Opcode, Big Noise, PG Music, Music Quest, Magnetic Music, Barefoot/Hybrid, Eventide, REP Magazine and Animation.

MIDI B Vendor Forum (GO MIDIBVEN)

—Get help from MIDI product vendors including Coda Music Technology, Cool Shoes Software, Covox, Lexicon, Live Sound!,

Multimedia Programs and Files

Whether you're a multimedia novice or veteran, the Multimedia and Macintosh Multimedia forums' library files are a valuable resource:

MACINTOSH MULTIMEDIA FORUM (GO MACMULTI)

Theater Maker 1.2—Lets you make stand-alone QuickTime movies that automatically play themselves or play against a background. Library 7, "QuickTime Tools," THEATR.SEA (243,200 bytes).

Metamorphis 1.0—Easy-to-use morphing software. Library 7, METAMO.SEA (141,952 bytes).

Soundtrack—Application that converts the soundtrack of a QuickTime movie into an AIFF sound file. Library 7, SOUND.CPT (7,296 bytes).

MovieMaker 1.3—Allows you to convert a sequence of PICT files into a QuickTime movie. Library 7, MMAKER.CPT (145,920 bytes).

EasyPlay 2.0—A QuickTime movie catalog application that helps you keep track of movie and picture files and allows you to play movies, view pictures and print images. Library 7, EZPLAY.SEA (87,424 bytes).

MacMessage—Customizable speech player that allows you to exchange voice messages, set your Macintosh to "greet" you on startup and more. Library 9, "Sound Tools," MACMES.SIT (47,232 bytes).

Sound Mover 1.9—A sound mover and editor that plays sounds asynchronously, meaning you can interrupt them at any time. Library 9, SNDMOV.SEA (115,840 bytes).

Player Pro 4.05—A sound tracker that allows you to play and edit music files, import MIDI music and more. Library 9, PLAYER.SIT (116,864 bytes).

Fractal! 1.0.1—Creates 24-bit fractal landscapes and allows you to control many aspects of the rendering. Library 10, "Paint/Draw Tools," FRCTL1.SEA (238,080 bytes).

Gossamer 2.0—3-D virtual-reality rendering system. Includes sample objects and worlds. Library 14, "Miscellaneous Multimedia," GSMDR20.SEA (226,944 bytes).

MULTIMEDIA FORUM (GO MULTIMEDIA)

DisplayMaster for Windows—Allows you to view multiple images, audio and full-motion video. Library 1, "General Information," WINDM.ZIP (281,421 bytes).

Desktop Video Production—Software for Microsoft Windows provides everything you need to make a video on your PC, including special effects. Library 2, "Video and Audio," VIDEOO.ZIP (612,588 bytes).

VIDVUE 2.3—Windows multimedia viewer, slide show and image utility. Library 2, VIDVUE.ZIP (317,777 bytes).

Whoop It Up! 2.0—Sound software that allows you to attach standard WAV and MIDI files to Windows applications, message box icons and system events. Library 2, WHOOP.ZIP (99,708 bytes).

Title Book—Video production system that allows you to add titles and graphics to video productions. Converts text and graphics into PCX images, which are displayed using special video effects. Library 2, TBOOK.ZIP (381,136 bytes).

SpeakerWave—Plays WAV files through the PC speaker without Windows. Library 2, SPKRWA.ZIP (145,408 bytes).

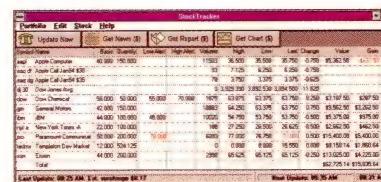
Sound System 1.1—A "high tech" jukebox that enables you to select different components of a multimedia stereo system that appears on your screen. Library 2, SS11.ZIP (41,353 bytes).

Windows Music Sculptor 1.1—Introductory-level MIDI sequencer that enables you to record, edit and play music. Works with any Windows-compatible sound card or MIDI interface. Library 6, "Windows/DOS/OS-2," WINMUS.ZIP (178,285 bytes).

Win Organ 4.0a—Simulates an organ keyboard and allows you to play music and view images on your monitor. Includes volume adjustment capability and sounds from 125 musical instruments. Library 6, WORGAN.ZIP (51,900 bytes).

CD Player 1.0—Plays audio CDs on your CD-ROM. Requires Windows 3.1 or higher. Library 6, CDPLRYR.ZIP (5,200 bytes).

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MIDI C Vendor Forum (GO MIDICVEN)
—Get help from MIDI product vendors including Asystem, AVM Technology, Blue Ribbon, DrumTrax, Dr. T's, Howling Dog, Innovative Qual Software, Mark of the Unicorn, MediaTech, Midi Solutions, OSC, Roland Corp, Soundcraft, Sound Deals,

from Forum Libraries

CD-REC 1.0—Lets you record parts of sound directly from a CD-ROM drive. Supports mono, stereo, 11, 22 and 44KHz sampling rate, depending on your sound card. Library 6, **CD-REC.EXE** (65,862 bytes).

Multimedia Maker—Business and educational tool that enables you to create presentations and tutorials complete with speech, music, special effects and graphics. Library 9, "Education and Training," **MMM20A.ZIP** (341,737 bytes) and **MMM20B.ZIP** (349,283 bytes).

Multimedia, DeskTop Video Defined—An overview of multimedia and desktop video. Library 16, "FAQ's/Help Files," **PART1.ZIP** (958,804 bytes).

Intro to MPEG—Information about the standard set by the Moving Picture Experts Group, covering what MPEG is, MPEG video and audio, professional MPEG software, MPEG-related hardware, additional sources of information and more. Library 16, **MPEG2.TXT** (207,494 bytes).

Intro to JPEG—Covers a definition and uses of the standard set by the Joint Photographic Experts Group, pros and cons of using JPEG, settings, arithmetic coding, DSP chips and more. Library 16, **JPEG.TXT** (60,930 bytes).

Sound Cards—Information about sound cards, including a definition, a list of sound companies, terms and terminologies, existing hardware and software, additional sources of information and more. Library 16, **SNDCRD.TXT** (122,287 bytes).

PC Sound Cards—A detailed introduction to PC sound cards, including how to choose one, what software and hardware sound cards need and support, a list of major sound card vendors and more. Library 16, **PCSNDC.TXT** (16,414 bytes).

Intro to CD-ROMs—Information about CD-ROMs and CD-ROM drives covering buyer recommendations, CD-ROM standards, where to get CD-ROM disks worldwide, reference sources, transferring information to the CD-ROM format, building your own CD-ROM and more. Library 16, **CDROM.TXT** (111,581 bytes).

Steinberg/Jones and Thoughtprocessors.

Multimedia Forum (GO MULTIMEDIA)
—Exchange information about using personal computers with media such as audio, video, animation, music and hypertext. Message sections and libraries cover video, audio, animation, interface design, marketing, CD-i and more.

Multimedia Vendor Forum (GO MULTIVEN)—Get help from multimedia vendors including AimTech, Authorware, Asymetrix, BCD Associates, The Center for Electronic Art, Cognetics, HSC Software, Meridian Data, New Media Graphics, nTergaid, Owl International, Specular International, Truevision, Turtle Beach, VideoLogic and The Voyager Company.

Multimedia B Vendor Forum (GO MULTIBVEN)—Get help from multimedia product vendors including Adda Technologies, Advanced Digital, AVID Technology, Cambium Development, FAST Electronic, InFocus Systems, Orchid Technologies, QSound Labs and Videomedia.

Pacific Vendor Forum (GO PACVEN)
—Get support from Creative Pacific in Section and Library 4, "SoundBlaster."

PC Industrie Forum (GO PCIND)—DMA, a publisher of German-language multimedia-related books, provides support for its utility programs in Section and Library 2, "Multimedia."

Sight and Sound Forum (GO SSFORUM)
—Share information about generating and using computer images accompanied by sound and music. Message sections and libraries cover animation, graphics, sampling, sight-and-sound GIFs and more.

Ultimedia Hardware Plus Forum (GO ULTIHW)—Find information on Ultimedia Tools Series products (authoring, content creation, capture and editing tools for video, audio, animation, graphics, image and music). Message sections and libraries cover MWAVE System, ActionMedia and V-LAN.

Ultimedia Tools Series A, B and C forums (GO ULTIATOOLS, ULTIBTOOLS, ULTICTOOLS)—Get help from vendors including Asymetrix, Autodesk, Fractal Design, Gold Disk, Passport Designs, DigiVox, Turtle Beach, Vision Imaging, Virtus Corp., Crystal Graphics, Digital Media and Mathematica.

Windows Third-Party A, B, C and D forums (GO WINAPA, WINAPB, WINAPC, WINAPD)—Get help from multimedia vendors including Aristosoft, Asymetrix, Deltapoint, Gold Disk, GFA Software, InfoAccess, Knowledge Garden, SoftCraft, SWFTE International and Wilson WindowWare. Watch for additional multimedia vendors in Windows Third-Party E and F forums (GO WINAPE, WINAPF).

by Don Crabb



MATT WALTON

Macro Economics

► Automating word processor and spreadsheet tasks with miniature applications can save you time.

There's an old programmer's motto that claims laziness is the father of invention. Writing macros may be the testament behind this, as consultant and software developer Ed Guy of West Vancouver, British Columbia, discovered when faced with a 5,000-file transfer from one system to another. He lost time because of the client's need for numerous fixes on Word for Windows files in various directories. So he created a macro, which he called "PinkBunny," to reduce the many efforts into just one.

A macro is a recorded series of commands, mouse clicks or keystrokes that "play themselves" within a spreadsheet or word processor to perform specific functions, thus automating repetitive tasks. While you may not be undertaking massive efforts like Guy's, many everyday computing chores that seem to keep going and going might be better handled by this customizing wonder of the computing realm. (See "System Macros and Scripting," p. 22.)

The best way to learn macro writing is to do it, according to Bill Smith of Sylvan Lake, Michigan, a frequent macro writer and a contributor to the Excel Forum (GO EXCEL). Most applications that support macros include Record Macro and Play

Macro commands. To create a macro, all you need to do is turn on the recorder and start adding the keystrokes, mouse clicks and commands you want to use later. When you are done, simply turn off the Record Macro command and name the macro. The macro is then available to run again and again using the Play Macro command. "The Excel macro recorder is a fantastic and much underused tool for writing macros. In fact, Microsoft discovered that experienced macro developers used the macro recorder more than inexperienced users," says Smith.

The kinds of macros you can create by recording depends on the application. In general, however, macros are most often written to automate actions that would be tedious or difficult to repeat time and again. Many users find that their most useful macros are those at the extremes of complexity. Rich Zaleski of Stevenson, Connecticut, a member of the LDC Word Processing Forum (GO LOTUSWP), says he most often downloads simple macros such as the ones for changing a printer screen frequency or anchoring a frame. Zaleski and others also copy and use very complex macros that automate so many tasks they are practically their own application, such as an Excel macro that creates a complete department-by-department budget

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Apps-Within-Apps

▼
Macro Uploads, p. 24

▼
The Used-Computer
Market, p. 26

Don Crabb is a contributing editor and columnist for MacWEEK and other publications. His CompuServe User ID number is 75300,3165.

model and prompts you for the input. Many such complex macros are found in the forum libraries, just waiting to "solve your specific problems," says Bill Holly, a member of the LDC Word Processing Forum.

Ami Pro user Jeff Siegel, a sociology graduate student at New York University and an institutional research consultant, found macros to be the ultimate problem solvers. Siegel often faxes memos and essays to professors, and he found switching from the word processor to the Printer Setup in Windows to change printer drivers every time he wanted to use his fax modem to be a waste of time. He created a simple macro that temporarily changes to the fax driver, alerts him to the change in the title bar and switches back to the normal driver after faxing. "I use this several times a day, and it saves a lot of keyboard time," he says.

Siegel also makes phone calls that many times lead to frustrating searches of his desk. "It often happens that people say to call them back in 10 minutes. So I scrawl a message on a scrap paper; the paper gets buried and I forget to call back." He wrote a 15-line macro that via a text box takes reminder notes and the number of minutes from "now" he'd like to be nudged into action. "My keyboard suddenly stops working and the message appears: 'Call Aunt Martha' or whomever. The macro is one of my favorites," says Siegel.

Student Andrew M. Freeman of Holbrook, New York, has written more than a dozen shareware macros for Microsoft Word 6.0 for Windows that have solved various computing dilemmas. His language studies inspired a French Dictionary macro. "I found that I often needed a French word with accents, so I created a macro that would look up a word in English or French, translate it using text files and insert it into the document," he says. "When I can't remember what a word is in French, I run the macro and, in a few seconds, a message box appears with the answer." Freeman also has written Word macros that serve as a personal information manager-like phone dialer and, in conjunction with a laser printer template, transfer graphics and text from one business-card-sized layout to nine others on the same page of card stock. "I use this all the time to produce my own classy cards. The results are professional-looking," Freeman adds.

The best way to start exploring the breadth and depth of these macros is by browsing the libraries of your favorite software support forum. According to Bill Sterner, the former associate director of academic computing at the University of Chicago, "I'll often download something that sounds interesting from its description just to see how it works." Members agree that the best way to move from macro explorer to macro writer is to focus on doing the things you need done in a specific way. Allen Cobb of Malibu, California, a member of the LDC Word Processing Forum, says, "Most of the macros I download or write are eventually assigned to smart icons. I have a palette of

smart icons *outside* of the Ami Pro main window, floating by itself on the Windows desktop." That way, Cobb can quickly get to the formatting and printing macros he uses over and over again.

The more experience you have playing other people's macros and recording your own, the more you will want to learn how to customize macros to better fit your needs. You might, for example, use a program's dialog editor (such as Excel's) to create a dialog box that you can pop up when the macro runs. This dialog takes whatever information is necessary for the macro to run, according to Zaleski. Once the dialog is built, you can write IF/ELSEIF routines that will direct the macro based on the choices the user makes in the dialog box, he says. This kind of customization will give the macro more capability and make it seem more like part of the application, which is what users find appealing in any macro.

Once you have recorded or downloaded a macro, launching one is easy. Macro specialist Cris Williams of Atlanta, Georgia, says macros often offer more than one means of being launched. Williams points out that Ami Pro macros can be launched from a pull-down menu, have an icon assigned to them, run from the Program Manager's command line or be launched from another application.

Attorney and WordStar Forum (GO WORDSTAR) member Rich Belthoff wrote complex WordPerfect macros after his firm switched to the word processor from WordStar two years ago. "I realized that WordPerfect had a lot to offer, but one thing it didn't have was a useful interface," he says. A touch-typist who didn't like having to lift his fingers from the home-key row, he found Function and Arrow keys impossible to use. So Belthoff wrote WSMENUS, a WordPerfect keyboard macro that accesses the program's functions using WordStar keystrokes and even includes WordStar's menus.

Previous experience with Quattro Pro's macro language and some playing around made the daunting task of learning WordPerfect programming easier and led Belthoff to write the more complicated, trademarked TimeTable macro, a law practice timesheet that uses WordPerfect 5.1's math functions. "If you experiment and ask questions online, you'll figure it out in no time," he says.

In learning the fundamentals of creating macros for your favorite program, you might be tempted to dive into your application's manuals to figure out the fine points of macro creation. Smith, however, says you won't learn to write macros for Excel by reading the Excel manuals, as they "are little more than a reference tool for *after* you know

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System Macros and Scripting: Automating the Desktop

In similar fashion to the ways application macros automate routine actions in word processors and spreadsheets, system-level macros and scripts can automate repetitive work and even the exchange of data between applications on your Windows desktop or in your Macintosh's Finder. Those practiced in the art of macro recording and script writing using the largely underutilized (Windows) or emerging (Mac) technologies believe most computer users can learn it and derive some benefit.

Windows

The Recorder utility you may have ignored is a rich source of Windows customization for even the most casual user, says Brian Livingston, author of *Windows 3.1 Secrets* and *More Windows 3.1 Secrets*. "Recorder records keystroke actions and, optionally, mouse actions. You can place the finished recording, a macro, on a hot key, so simply by pressing Control-Alt or Control-Shift key combinations, the same actions you recorded will be played back," he says. Everything from sizing and stacking windows a certain way to changing printers to copying data between open applications can be achieved with a couple of keystrokes. "It takes away some of the tedium of thinking through and manually handling each step."

With slightly more sophisticated macro twiddling, users can assign a series of actions (not just launching) to any Program Manager icon, or make Windows imitate DOS's AUTOEXEC.BAT ability to perform a number of tasks at bootup. Why haven't its features been touted? "Recorder has been disparaged in the computer press, because you can't edit a macro once you've recorded it," says Livingston. (Commercial utilities such as CE Software's ProKey provide that ability.)

One of the more common uses of a Recorder macro is as a hot key that spits out your name and e-mail address in a "banner" at the end of a message. "When you send messages out across the Internet, some hosts don't preserve your return address perfectly, so this is a good idea," says Livingston. Another macro lets him switch the mouse buttons from left-handed to right-handed and back, and he's redefined some of his less-useful function keys: F10 runs a series of word-processor keystrokes that convert all-uppercase text to lowercase, and F11 runs Alt-File-Save, consistent across Windows programs. "Whenever I'm writing and I finish a paragraph, I just hit F11 instead of pulling down the file menu."

An undocumented command-line feature also allows the creation of startup macros that let you automatically configure applications lacking their own macro language. "I like to open Paintbrush and have it set to a particular size—I have a Super VGA screen, but I prefer Paintbrush to have a 640-by-480 active area," says Livingston.

Because they're uneditable, Recorder macros are better off short (they're easily re-recordable that way). Macro nesting, however—recording a series of hot keys that play back other macros—permits more complex actions and editing. Truly complex tasks may require that you graduate to a higher level. "Once you discover

that you need to be changing a macro frequently, or need to ask the user for some kind of input during an action, you should think about using one of the batch programming languages, such as the shareware WinBatch," suggests Livingston.

Macintosh

Power users desiring to script actions in the Mac's System 7 have long sung the praises of CE Software's QuicKeys, and are beginning to experiment with Apple's AppleScript extension (automating everything from simple Finder steps to the exchange of data and instructions between Apple Events-savvy programs) and Userland's Frontier application.

Roland Mailleux, a support representative for a Brussels, Belgium, computer dealer, uses QuicKeys' hot key macros for simple operations such as launching a program, opening a document and accessing the Portable control panel on his Duo. "I don't have to scroll a rather long Apple menu or navigate several levels deep in my folder structure to reach files and programs I need a lot," he says. A more complex macro he has authored pastes selected messages from Navigator to QuickMail, grabbing the subject of the Nav message and placing it in the QuickMail subject field, then sending it off to his support colleagues—a task that was manually tiresome.

Working for a Seattle, Washington, management consulting business, Stephen Toutonghi writes Frontier scripts that work on a network. After suffering sloppy floppy-disk archiving for too long, Toutonghi created a script that checks folders on the network for files, pulls them to the server, sorts them, extracts creation date and Get Info data, and dumps that into a FoxPro database used to coordinate electronic files with hard copy. "It's pretty slick," he says.

Tom Trinko, author of Prima's *Automating Your Mac with AppleScript and Frontier*, says that despite the programming-like logic involved in using those products' English syntax (and Apple's backing away from selling the concept to home users), almost anybody can learn to script. "I've seen people online who didn't know anything about writing code become expert scripters," he says. Many more people, he adds, will end up using scripts others have written—the Userland Support Forum (GO USERLAND) libraries stock many—and developers will come to see the utility of including scripts with their programs.

Trinko has written Frontier scripts that automatically decompress downloads and file them, trashing the compressed file; back up folders and files from across pieces of different hard disks; track how much time he's using various applications for tax purposes; and delete the many zero-K temporary Microsoft Word files that build up in his crash-prone system. Again, script complexity is the key to which product is appropriate: "If your script gets so complicated that it's hard to get it working properly, which is to say you need a debugger, then you need Frontier."

—Christopher J. Galvin

how to write macros—kind of a catch-22." Smith also is not too optimistic about learning macros from manuals. "The books usually explain concepts in more detail, but I've seen very few good ones," he says.

Learning how to make a macro do your bidding is the toughest skill to learn, especially as you graduate to writing more complex macros. "Most macros just don't do what they've been designed to," says Williams, who claims the culprit is often incorrect logic. Many members such as Bill Holly have found debugging to be more an exercise in creativ-

ity than anything else. "The most common problem in creating a macro is discovering that there is no clear command that will do what you want," he says. "That's when you have to get creative. Sometimes you have to find a way to 'trick' a program into doing what you want," Holly says. For example, in Ami Pro there is no way to automatically select and copy text from a single column, but Ami Pro does allow you to automatically select and copy a text frame and its contents. So, to build his Booklet

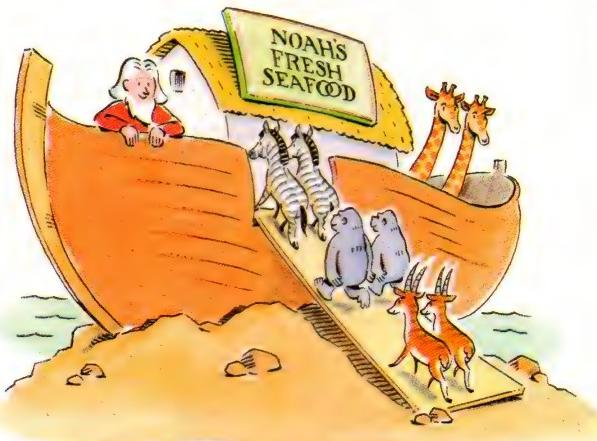
Macro, Holly made sure to put everything in frames first.

If you want to become a macro guru, though, there's no substitute for studying other people's macros. "Excel comes with many examples and support macros," Smith says. "Open these and study the code, looking up functions you don't understand. Not only will you understand macros better, you also will get a chance to learn macro structure and technique," he says.

See "Macro Uploads," p. 24.

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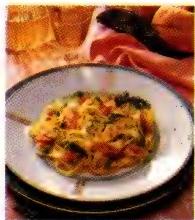
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Mini-Apps for Popular Programs: Macro Uploads

Here's a sampling of some of the more popular macro downloads from CompuServe's word processor and spreadsheet support forums:

BORLAND QUATTRO PRO FORUM (GO QUATTROPRO)

Spreadsheet Blocks—Instructions for building a batch-print macro that prints multiple spreadsheet blocks, from different or the same spreadsheets. Library 1, "Tech Info Sheets," TI666.ZIP (2,346 bytes).

Dollar Signs—Instructions for making a macro that allows dollar values to be entered into a cell without entering a decimal point. Library 1, TI629.ZIP (1,184 bytes).

Utilities Disk—List of contents of the Quattro Pro for Windows Utilities Disk, containing various macros and notebook templates. Library 1, TI1359.ZIP (1,675 bytes).

To Your Health—Two QP DOS spreadsheets to record, organize and graphically depict user input related to blood analysis. With customized menus and direct macro activation of graphical display. Library 2, "QP/DOS-General," HEALTH.EXE (50,688 bytes).

Spreadsheet Consultant—A sample issue of this electronic newsletter for spreadsheet users, usually featuring macro-writing advice. Other issues are available. Library 2, SC9306.EXE (24,378 bytes).

QP Worksheets—Examples of macros for many common tasks, such as printing multiple spreadsheets and graphs. Library 4, "QP/DOS-Macros," UTLDISK.ZIP (153,576 bytes).

Biorhythms—A macro that generates a simple biorhythm chart based on your date of birth. Chart covers four previous and 14 successive days. Library 9, "QP/Win-Macros," BIO.ZIP (151,798 bytes).

DELMAKER—A macro-driven application that creates delimited ASCII text files from a block of cells within a notebook. Library 9, DELMAK.ZIP (43,558 bytes).

LDC SPREADSHEET FORUM (GO LOTUSA)

Macro Commander—A Lotus 1-2-3 add-in with an interface for quick entering of advanced macro commands, movable windows and online reference help. Shareware. Library 0, "Product Info, Demos," MCMDR.ZIP (44,928 bytes).

Black Box—A macro programmer's "free lunch," this plug-and-play subroutine library lets you build complex macros by snapping together pre-written modules for data input, sorting, database query, picklists and more. Library 2, "1-2-3 Release 2.x," BBX.ZIP (59,264 bytes).

Big Mac—For spreadsheet users, this 250-line macro has ideas on numerous commands you may use. Library 3, "1-2-3 Release 3.x," BIGMAC.WK3 (13,371 bytes).

Access Numbers—Menu-driven macro application to help you find your local (U.S.) CompuServe node's phone number. Library 5, "1-2-3 for Windows," PHONES.WK4 (67,852 bytes).

LOTUS WORD PROCESSING FORUM (GO LOTUSWP)

Envelopes & Addresses—Two Ami Pro technical notes with the updated macro files for the Print Envelope function, and an explanation on how address lines in a letter can be printed easily on an envelope using a macro. Library 5, "Ami Pro/W Technotes," ENVEL3.EXE (29,483 bytes) and AP9241.TXT (4,258 bytes).

MICROSOFT EXCEL FORUM (GO MSEXCEL)

ScriptWriter—An Excel 4.0 add-in that alters the way macros are written, from formula entry to a user-friendly scripting language. Library 2, "Excel for the Mac," SCRWRIT.SEA (125,568 bytes).

Loan Schedules—Macro to generate fixed-rate and variable-rate loan schedules. Allows for extra principal payments; shows annual interest and principal amounts. Library 3, "Excel for the PC," AMORT.XLM (34,230 bytes).

File Copying—Excel macro language makes no provision for direct copying of non-text files from one place to another. This macro uses Windows API calls to perform that function on a file of any size of type. Library 3, FILECO.ZIP (4,298 bytes).

Excel Macro—Engineers, researchers and statisticians will like CURVEFIT, which finds trends in data by extending Excel's data regression capabilities to include linear, exponential and other routines. Library 3, CURVEF.ZIP (40,197 bytes).

Procomm Link—An Excel macro and ProComm script that work together to download MQINT data directly into an Excel spreadsheet. Library 3, CISMNA.ZIP (16,201 bytes).

MICROSOFT WORD FORUM (GO MSWORD)

Sample Macros—A Word for Windows template with macros to print odd/even pages, copy glossary entries between templates, create organizational charts and more. Library 2, "Files from MS PSS," WBSAMP.EXE (95,616 bytes).

Fileware 3.0—Award-winning series of add-in macro applications that gives you the "features Microsoft forgot to include," such as an integrated address book, 60-character file names and a custom toolbar. Library 4, "Word for Windows," FW30W6.ZIP (197,469 bytes).

MegaWord—Another macro applications package, with 30 add-ins and a users guide in a separate file. Library 4, MWRD6B.EXE (145,047 bytes) and MWRD6A.ZIP (260,910 bytes).

Credit Card Valid?—A Word for Windows macro that tells you if a credit card number is or could be valid. Apparently works on most cards. Library 4, CREDIT.EXE (34,692 bytes).

PinkBunny—A macro repeater that lets you run the same Word for Windows macro on a bunch of files. Library 4, PNKBKNY.EXE (7,842 bytes).

More Typos—This macro adds 347 common misspellings to Word for Windows' AutoCorrect feature. Lets you add your own frequent typos. Library 4, TYPOS.DOT (19,456 bytes).

Moosie Macro—John De Palma writes many popular Word for Windows macros; one of the most frequently downloaded is a single and multiple macro copier with a built-in "turbo" checkbox. Includes other macros, such as CloseAll, CountMacros, SeeFootNotes. Library 4, MACRO1.EXE (32,064 bytes).

Fax Macro—Easy one-click way to send faxes from inside Word for Windows. Simple to set up and use, regardless of your hardware and software. Library 4, TFAX11.ZIP (56,984 bytes).

Calendar Maker—Creates monthly calendars, with style formatting for easier customization. Library 4, WWCALN.ZIP (7,936 bytes).

MasterSeries—MasterMind's series of macros, letting you open any file and any directory, switch among toolbars, dial the phone, play sound files and more. Library 4, MS6.EXE (72,172 bytes).

MakeCharacterSet—Macro to print a columnar page displaying all printable characters for a font. Library 4, W4WMCS.ZIP (5,679 bytes).

CountNewWords—Macro for counting the words in a document and words entered since start of editing. Library 4, NEWWOR.ZIP (3,183 bytes).

Two-Sided Printing—Dialog box-driven macro for printing both sides of a page, with odd/even printing, alternating header/footer page numbering and page ranges. Library 4, PRNTSP.ZIP (9,208 bytes).

Toolbox—Shareware WinWord macro series, with ChooseDirectory, SnapShot, Smart FileFind, MakeBook and more. Library 4, GTBX20.EXE (296,111 bytes).

WORDPERFECT USERS FORUM (GO WPUSERS)

TimeTable—WordPerfect DOS 6.0 macro demo that creates timesheets using tables and table math. Automatic date insertion and saving. Library 3, "Macros/Merges," TTEVAL.EXE (56,762 bytes).

Fax Cover—Macro to create a fax cover sheet from a form you specify. Searches for fax numbers from a directory list created and maintained by the macro. Library 3, FAXCVR.ZIP (18,384 bytes).

Book Excerpt—Three chapters from *WordPerfect 6.0 Advanced Macro Programming: A Learning Guide* by J. Westergreen. Library 3, MACROD.ZIP (31,777 bytes).

Animated Clock—Real-time DOS animation of a clock, constructed of various macros' codes. Library 3, TIMER2.ZIP (7,720 bytes).

Have a MALT—MALT is a memory-resident utility that adds 90 Alt-like keys to WordPerfect DOS for running macros, using Caps Lock as an auxiliary key shift. Library 3, MALT.ZIP (53,436 bytes).

Tools—A package of macros and libraries to help construct WordPerfect DOS macros. Inserts common commands, routines, dialogs, functions and procedures into macro text. Library 3, TOOLS.ZIP (38,979 bytes).

Document Closing—This macro provides something WP forgot: the ability to close documents from a single dialog box. Closes check-marked or all unmodified documents; warns if modified document is about to be closed. Library 3, CLOSE.ZIP (12,272 bytes).

Clip Art Catalog—Create a custom view to your clip art with this macro. You control the look by picking number of images per page, header/footer text, font size, margins, line width and more. Includes wallpaper image when run in text mode. Library 3, CLPART.ZIP (29,752 bytes).

ASCII Converter—Macro prepares ASCII for conversion to WordPerfect format, stripping hard returns, replacing multiple spaces with a single space or a combination of both options. Library 3, STRIP.ZIP (13,068 bytes).

Marginalia—Two small macros that insert a "Page X of Y" footer and insert a file name stamp at a document's end. Library 3, PAGXFY.ZIP (6,774 bytes) and FLSTMP.ZIP (6,824 bytes).

Bullets Flying—This macro inserts one of 35 bullets, fractions and special characters into your text, all listed in one dialog box. Library 3, BULLET.ZIP (15,668 bytes).

All the WP Macros—A list of all 1,600 WordPerfect macro and macro-product commands, in some cases listing the arguments the commands accept. Library 3, MACCON.TXT (34,324 bytes).

Grocery Macro—A WordPerfect for Windows macro that lets you create printed shopping lists, organized to reflect your grocery store and the way you shop. Library 5, "WordPerfect Windows," GRLIST.ZIP (44,263 bytes).

Printer Macros—If your WordPerfect for Windows documents contain logos, letterhead, fixed header/footer info and you print with an HP LaserJet II, III or 4, these macros let you reduce document size and printing time. Library 7, "Macros/Merges WIN," HPMACW.ZIP (30,057 bytes).

Language Characters—A group of simple macros for writing the common foreign-language accents without the long-winded extended character set table. Library 7, ACCENT.ZIP (9,435 bytes).

WordPerfect for Windows Primer—Help for learning WordPerfect for Windows macro language, adapted from Gordon McComb's *WordPerfect for Windows Power Tools*. Library 7, WINTUT.ZIP (73,812 bytes).

Deluxe Cardfile—A feature-packed card file macro application, with ability to browse, search, add/delete, sort and insert records into one of three template document files. Library 7, CARDFI.ZIP (44,704 bytes).

Tips Submissions—Instructions on sending WordPerfect macro tips and tricks to Ziff-Davis' PC/Computing magazine. Library 12, "3rd Party/Books/Mag," TIPCAL.WP5 (3,880 bytes).

Make Pamphlets—A WordPerfect 5.1 DOS macro package for building pamphlets from formatted text files. Shareware. Library 15, "WordPerfect 5.1 DOS," BKBILD.ZIP (136,940 bytes).

Bar Coding—WP 5.1 and WordPerfect for Windows macros that create U.S. Postal Postnet Code from ZIP or ZIP+4. Works on any printer capable of graphics printing. Library 15, BARCOD.ZIP (24,374 bytes).

FACMAC Pack—Version 4 of Ken Fackler's 100-macro series, with 76 stand-alone macros and 24 keyboard macros. Shareware. Library 15, FCMAC.EXE (111,915 bytes).

Box Maker—Two double strike macros that create graphic lines or boxes. Library 15, GRAFX.EXE (18,769 bytes).

Macro Programming—The programming environment for WordPerfect, enabling you to create macros on the WordPerfect editing screen as easily as a WordPerfect document. Seamless integration and comprehensive development tool collection. Library 15, MPE4WP.ZIP (146,478 bytes).

Date Conversion—A group of WordPerfect 5.1 macros that process dates: from calendar format (month, day and year) to day of the year (ordinal or Julian), leap-year determination, more. Library 15, DATES.ZIP (11,891 bytes).

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Used but Not Used Up

► A bustling market for previously owned PCs can be found online.

Ready to ride the roller coaster of personal computer prices? They climb when a dramatic new product comes out, plummet for the model it replaces. In this ever-present pastime, buyers and sellers of used equipment have a front-row seat, especially with the CompuServe forums, where exchanges frequently happen. But how can they find and negotiate the best deals?

About 1 million PCs become available for resale each month as their owners replace them with newer models. New Pentium and PowerPC Macintosh machines have driven down prices on '486 computers and used high-end Macs, and sellers are getting 30 percent to 40 percent of what they paid for their nearly new models. A '486-class machine that cost \$3,000 new last year now sells for less than \$1,200, says CompuServe member John Hastings, whose American Computer Exchange brokers the sales of about 1,000 PCs every month.

Is it a seller's market? Newer equipment favors the seller, with many buyers looking for bargains on late-model '486 PCs. However, for a '286 or a slow '386, it's a buyer's market because the supply outweighs the demand. "A year from now you'll see a glut of '486 machines," Hastings predicts. "Everyone will want to buy a used Pentium."

Finding a used computer for a good price means combing directories, such as the 692-page *Orion Computer Blue Book*, which lists 32,000 used PCs and peripherals, and indexes published by numerous computer exchanges. Two well-known exchanges are Hastings' American Computer Exchange and the United Computer Exchange, which specializes in Macintosh equipment. Both have headquarters in Atlanta, Georgia, and operate similarly.

"The sellers call in and list equipment they want to sell," explains Michael Jordan, president of UCE. "Buyers ask, 'What do you have listed?' We have 30,000 items on our database." Once the deal is done, the seller ships the equipment and the buyer sends the money. The exchange charges the seller a 10 percent to 15 percent commission.

Bargain hunters also should check prices in computer journals, mail-order catalogs and classified-ad columns, such as CompuServe's Classified Ads (GO CLASSIFIEDS), and browse CompuServe's various forum classified-advertisement sections, according to experienced trader Andy Lang, a used-computer dealer in Pollock Pines, California. Lang, a member of the Macintosh Community Club Forum (GO MACCLUB),

checks "for sale" or "equipment wanted" classified ads posted in the forum to locate buyers or sellers of used equipment.

Through forum classifieds, Merle Van Dolson, a training officer in Honolulu, Hawaii, bought a used Mac IIci, video card, cache card, 16MB of RAM, a MacRecorder and a hand scanner. "I figure that I saved more than \$1,000," he says.

Jason Taylor, a Rosendale, New York, advertising agency executive, bought a late-model Macintosh PowerBook Duo with a DuoDock, all under warranty, for \$1,500, a savings of nearly 50 percent. "I was able to sell the Mac Portable I was replacing for \$450, so I performed the whole upgrade for about a grand," he says.

Using CompuServe forum classifieds has advantages and disadvantages, Lang finds. For sellers, the cost of posting an ad is less than that of a newspaper classified. Chances of a quick sale are greatly improved by the large number of forum members. The main disadvantage: Macintosh forum members are "very price-conscious and make offers on the low end of the scale," says Lang.

From the buyer's standpoint, the situation is favorable, with low prices and wide availability of products. "The drawback is that you have to act quickly when buying on CompuServe. It's not uncommon for an item to be sold within hours of its posting," Lang notes.

Buyers not interested in owning the latest hot box at sky-high retail often can assemble an almost-as-fast system from what's available used, says Dan Bull, a systems consultant in Riverside, California, who trolls the IBM Hardware Forum (GO IBMHW) for equipment. "State-of-the-art machines are not necessary for most applications. With the low prices available on the used market, I can build a '486SX system for pennies on the dollar compared with new hardware."

The online marketplace also proves to be a source for hard-to-find items, notes IBM Hardware Forum member Scott Sendllein of Boca Raton, Florida. He wanted to sell a

sound card for a Microchannel IBM PS/2, an item discontinued by the manufacturer shortly after he purchased it, and listed it online. "The response was overwhelming—I had many offers within hours of my postings," he says. "I don't know how others would be able to get one without the online connection."

Online used-computer bargains are so plentiful that forum members often take orders for friends and co-workers. Glenn Storey, who works for an aircraft parts company in Everett, Washington, bought \$10,000 worth of used equipment last year for his co-workers. "Word got around the company that I was the guy to see on computer questions. I'd take a quick look in the IBM Hardware Forum. If something was not advertised, I'd post a message, and most times somebody had what I was seeking."

Jens Mueller's Long Beach, California, company switched from IBM PCs to Macintosh computers for its 1,100 employees. In six weeks, the company purchased more than \$20,000 worth of Macintosh units and peripherals on CompuServe. "The sellers are very sophisticated; they know technology. Product availability is much greater online than in any newspaper," he says.

Users of forum classifieds report a high degree of trust and integrity in online transactions. Indeed, there seems to be an unwritten code of ethics. "It's a trustworthy bunch. I don't think I've ever heard about someone getting ripped off," says Taylor.

Colin Hessel, a computer consultant in San Juan Capistrano, California, agrees. He bought a printer, a PowerBook laptop and a hard drive through Macintosh forum classifieds. "I buy here because the people know the fair market prices and they are extremely honest."

Eric Robbins, a systems administrator at Seton Hall University in New Jersey, advertised his Amiga 2000 online. Through the Internet gateway on CompuServe, he negotiated with a buyer in Brazil. "After quite a bit of negotiating about the exchange of money

COMPUTING SERVICES



Computer clearance middle-man: Jordan

JOHN DICKERSON

Why Selling Old Software Is Different

Planning to buy or sell "used" software? You need to be aware of special rules that don't apply to hardware.

Under copyright law, when you buy commercial software, you're buying a license to use the software, not just the diskettes themselves. For this reason, it's not legal in most cases to sell your older version after you've upgraded. When you sell your older copy, you transfer the upgrade rights to the buyer as well. This means, in effect, that you give up your rights to that copy of the software.

The software industry is not against selling used software, explains Christopher Hopkins, public relations coordinator for the Software Publishers Association (GO SPAFORUM), principal trade association for the industry. "If you sell to another person, give him all the disks and instructions and make sure you don't keep any part of the package. In other words, transfer the whole product," he says. "Then you should write a letter to the company saying, I'm the registered user and I sold my copy to so-and-so, and he is now the rightful owner." The buyer also should notify the company and report the serial number, to get mailed notices of future upgrades.

Managers of CompuServe forums with classified-ad sections monitor the ads for copyright violations. Don Watkins, chief IBMNET sysop, says the classified-ad library of the IBM Hardware Forum (GO IBMHW) does not accept software "for sale" ads. "If we saw a message offering to sell Version 3 'because I have upgraded to Version 4,' that would be a violation of almost every license," says Neil Shapiro, chief sysop of the MAUG forums. "Generally speaking, most software license agreements are phrased in a way that if you buy an upgrade, you're supposed to destroy the previous version." Sysops remove the message from the forum board and

explain the violation to the sender.

Maryann McCourt, a desktop publishing consultant in Pembroke, Massachusetts, transferred her license when she sold software she couldn't use through the Macintosh Community Club Forum (GO MACCLUB) classified section. "Both parties won," she notes. "The buyer got a great price, and I got to redo an expensive purchasing mistake."

Dale Larson, whose company in Drexel Hill, Pennsylvania, consults in networking Amiga computers, looks out for late-model software bargains in the Amiga User Forum (GO AMIGAUSER) classified section. He advises sellers to read their software license statements carefully because of differing vendor policies.

"Some license agreements don't care what you do with older versions. Some allow you to sell an older version as long as you indicate that it is unsupported and nonupgradable; and some forbid distribution of any older version except with full transfer of the license, including the current version."

The rules are more relaxed for the sale of shareware—software that the publisher freely distributes and encourages users to try before they buy. Once they've decided to keep the product, users are asked to pay the registration fee—usually far less than the cost of comparable commercial software—to get the manual, disks and notice of future upgrades.

Sometimes an older commercial version is sold as shareware—and can be downloaded from CompuServe forums—while the new version is offered commercially. This can mean a bargain for users who don't need all the latest bells and whistles.

—MN

and shipping, we were able to complete the entire transaction through e-mail." Robbins attributes this to the "trusting nature of the computer community at large."

While trust and integrity are important assets, successful transactions are made with careful arrangements. For sellers, according to Long, that involves the following:

- Ship COD, accepting only cash, cashier's check or money order. However, shipping COD can be risky, according to regular used-hardware seller Bob Kertesz of Los Angeles, California, who says that a buyer can refuse a shipment, forcing you to pay not only to have a package sent but also to have it returned. "The equipment may be gone as long as three weeks, and you don't know it has been refused until you get it back. Plus, any potential sale during the time the merchandise is gone is lost," he observes.
- Clearly state the terms and conditions of a deal before the buyer sends any money, and save all relevant e-mail.
- Figure the shipping cost in advance so that the buyer will know the full amount he has to pay COD.
- If your shipment amounts to more than one package, write up each package as a separate shipment. That way the receiver can't take a package that doesn't have a COD tag on it.
- Ship the merchandise in as clean condition as possible, inside and out, and package the items carefully.

Other forum members recommend that

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If you're buying, experts advise checking over your purchase carefully as soon as it arrives. That involves the following:

- Open the central processor case and look for loose connections, dust buildup or other visible problems. Clean with a hand vacuum, tighten loose cable connections and press down to reseat RAM chips that may have "crept" out of their sockets.

► Boot up your system from a diskette. If the system fails, the diskette controller card, the diskette drive or the motherboard could be defective.

- Boot from the hard disk. If the system fails, the disk could be improperly formatted or missing essential startup files, or the disk, its controller card or the motherboard may be defective.
- Listen to the sound the hard drive makes when you read from or write to it. If there's

a grinding noise, it could spell trouble. Run Norton Utilities or another disk diagnosis program.

- Try copying files from one drive to another. Failures indicate a defective drive.

► Check the memory. Make sure the amount of RAM displayed on the monitor during bootup matches what the seller told you.

- Check the keyboard. Do the characters on the screen match each character on the keyboard? Test the cable by gently tugging at it.

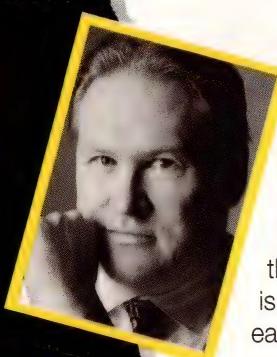
► If the fan sounds noisy when you turn on the computer, that could indicate problems. The fan can be replaced, but it may have damaged heat-sensitive electronics inside.

- Does the monitor flicker or show shadow images? If so, return the monitor. The problem won't go away.

So if you're looking to rid yourself of some electronic trash, or hoping to find, amidst others' refuse, a computing treasure that's not much worse for the wear, the used market beckons, says Allen Murdock of New Rochelle, New York. He has bought—affordably—and sold—reasonably and without quibbling—online. "One always wonders in such instances whether one is being a sucker. But in selling an old modem, my faith in mankind was rewarded," he says. "The check arrived, printed with the buyer's full name, including the honorific 'Reverend.' I guess I trusted the right guy."

Michael Naver of Baltimore, Maryland, is a contributing editor of CompuServe Magazine and a free-lance writer on technology applications for business. His CompuServe User ID number is 76004,2242.

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COMPUTING SERVICES

Where to Look Online

Planning to buy or sell a used computer? CompuServe Classified Ads (GO CLASSIFIEDS) is a high-traffic area for either pursuit. Listings include DOS-based and Macintosh computer hardware as well as hardware for other platforms. Also visit the following forum classified sections as outlets for online dealing:

- Amiga User Forum (GO AMIGAUSER), Section 17, "Classifieds."
- IBM Hardware Forum (GO IBMHW), Library 8, "Classifieds."
- Macintosh Community Club Forum (GO MACCLUB), Section 6, "Classifieds."
- United Computer Exchange, Macintosh price lists, Macintosh Hardware Forum (GO MACHW), Library 1, "Help Files," USED.BIN; ZiffNet MacWEEK Forum (GO MACWEEK), Library 4, "Background Info," UCEIDX.TXT.

—MN

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Enabled by PCs

► Special computer hardware and software help the disabled to be more productive and proud.

For most workers, computers are tools for doing more work faster. However, for the disabled, they often represent the difference between getting a job done or not being able to do it at all. Hardware and software designed to overcome specific limitations increase the productivity of disabled workers, while CompuServe connects many to the outside world.

Stan W. Gowin of Reston, Virginia, credits his computer for his career as an IBM mainframe programmer with Software AG of North America. Born with only a limited field of view in his left eye, Gowin started programming in the days of punch cards, interpreting the punched holes by touch and by using a magnifying glass to figure out what he had typed on the cards.

That was all changed in the early 1980s by an Apple II computer equipped with a primitive speech synthesizer card, a device that reads aloud the text on the screen. For the first time, he could work with software without having to look at the screen and struggle to see the words.

He now uses a '486 PC with a CD-ROM drive, SoundBlaster card, 20-inch Super VGA monitor, two IDE hard drives and a track ball. Adaptive software from AI Squared offers a large-print display that magnifies text and graphics and represents the image as much as 16 times larger for

DOS applications and 32 times larger for Windows applications. Speech synthesis software and hardware from Artic Technologies let him take full advantage of the computer, relying on his sense of hearing rather than sight to access it.

"The combination of large-print display and speech is powerful when properly used for the partially sighted computer user," says Gowin, noting that he uses the magnified display to see lines of code or a word processing format and relies on the speech synthesizer to read a screen full of text. "This gives me the ability to use my computer as efficiently as a fully sighted person."

Software AG, for whom he has worked for nine years, purchased a closed-circuit television magnifying system that allows him to read and write the old-fashioned way: on paper. Using a video camera and a high-contrast monitor, the system magnifies books, memos, letters, diskette labels or whatever he places under it for viewing. There is even enough room under the camera for Gowin to write. "Without my computer and its adaptive add-ons, I wouldn't be employed in the computer industry and probably wouldn't be enjoying my current lifestyle," he admits. "The PC has been a booster rocket for my career."

It may seem inconsequential to some, but for Mary-Elizabeth Peters how her computer is arranged on her desk is just as important as the actual hardware. Peters, program

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▼ Helping the Disabled Work

▼ Online Resources, p. 31

▼ Electronic Resumés, p. 33

Disability Info: Online Resources and References

To learn more about adaptive computer technology, consult these online resources:

DISABILITIES FORUM (GO DISABILITIES)

Sections and libraries are devoted to specific types of disabilities, including developmental, learning, deaf and hearing-impaired, vision, mobility and multiple sclerosis. Files of interest include:

Making the Computer Work—List of hardware and software along with manufacturers that make IBM-compatible, Apple and Macintosh computers easier to use for those with disabilities. Library 10, "General Interest," ASSIST.TXT (13,089 bytes).

Slimware Window Bridge 1.23—Demo program for the more than 15 speech synthesizers supported by this feature-filled software for those who need speech output to access the Windows 3.1 platform. Library 5, "Vision Impairments," SWB_P.ZIP (551,391 bytes), SWB_M.ZIP (237,380 bytes), SWB_D.ZIP (179,180 bytes), SWB_C.ZIP (109,748 bytes).

HANDICAPPED USERS' DATABASE (GO HUD)

Dozens of articles in a menu-based reference system are offered on adaptive computer hardware, software and reading devices. Some topics include voice-operated computers, synthetic language interfaces and braille embossers.

Read More About It

COMPUTER DATABASE PLUS (GO COMPDB)

Search Computer Database Plus by the type or specific name of the adaptive computer technology you are seeking information for using Option 4, "Product Names." General articles on the topic include:

"Adaptive Technology: Creative Products Open Doors for Disabled Workers," *Government Computer News*, April 27, 1992. Reference #A12186921.

"A Wealth of Adaptive Technology," *Government Computer News*, Jan. 6, 1992. Reference #A11712458.

"Making the GUI Talk: Adapting Graphical User Interfaces to the Needs of the Blind," Byte, Dec. 1991. Reference #A11614390.

IBM SPECIAL NEEDS FORUM (GO IBMSPECIAL)

Section and Library 2, "Software," Section and Library 3, "Hardware," and Section and Library 16, "Braille Access Tech," focus on adaptive computer technology equipment, issues and concerns. Files of interest include:

Hardware Prices—Price list of PC peripherals, including voice recognition, Covox products, sound cards and multimedia equipment. Library 3, "Hardware," BACHW4.EXE (14,957 bytes).

IBM Screen Reader for DOS—Description and purchase information for this product, which allows the blind to hear the words on a display screen. Library 3, "Hardware," SRD12.TXT (1,738 bytes).

Statistical Talk—STATALK provides three statistical clinical inference tools in a form that facilitates use by clinicians with visual disabilities. Small, medium and large character size available, as well as voice output with Covox Speech Thing. Freeware. Library 2, "Software," STATAL.ZIP (41,856 bytes).

manager for the People with Disabilities Program, which is part of the Department of Transportation's Research and Special Programs Administration in Washington, D.C., contracted juvenile rheumatoid arthritis when she was 14, leaving her with severe bone damage, especially in her hands.

In an attempt to make things easier for her, RSPA gave her a very large desk about 4 feet deep, not realizing that anything she couldn't reach by simply extending her arm was inaccessible. "I've rearranged my office four times since November to get things within easy reach," she says.

Equipped with a '486 desktop computer, modem and printer, Peters praises RSPA for going out of its way to find for her a comfortable keyboard that requires little pressure on the keys, since it is difficult for her to hold a key down for long, as well as a high-quality mouse that is easy for her hands to manipulate. The addition of Microsoft Access DOS software makes it possible for her to tap the Alt, Shift and Control keys in sequence and not in combination with other keys, a task that is hard for her to manage. Once hit, these three keys stay down until she taps them again, making typing much easier for her. Her computer setup cost no more than that of any other agency employee.

"For me to be able to work full time, I have to do things in the most energy-efficient, streamlined way possible. So the love of my life is electronic mail," she says. "I can get the information I need without leaving my desk." RSPA's in-house e-mail system allows Peters to get quick answers to ques-

tions and to work on group projects without having to attend meetings.

Communications technology also has boosted productivity and the quality of work for the deaf and hearing-impaired. Paula and Howard Rosenthal, who own Firefly Software Corp., a software development company in Jericho, New York, both have severe binaural hearing losses but function well with hearing aids. Using four '486 desktop computers, a '486 notebook computer, a local-area network and four modems, Howard programs and develops the company's products, while Paula, a recent law school graduate, does the marketing and accounting. The firm's latest software is PhotoGenix Professional Edition, which allows users to create and distribute screensaver slide shows.

CompuServe has opened up a new world for the Rosenthals, who offer their customers technical support via CompuServe Mail. "Many people have accents or speak low on the phone, making it difficult for Howard to hear them," says Paula. The Rosenthals now include their CompuServe User ID number on all of their product materials as a tech support option. Using CompuServe Mail, "Howard is able to get back to people with answers or help that same day, and it's much easier for him to understand the problem because he doesn't have to 'hear' them," says Paula.

Fax machines also aid the Rosenthals' productivity. Paula prefers to fax messages rather than use the telephone, for fear she'll be faced with a voice-mail system. It is nearly impossible for her to hear the directions for

which buttons to push—even with her hearing aids—a situation she finds embarrassing. "I'm intelligent and can earn advanced degrees, but I can't follow voice-mail instructions," she laments.

The key to personal productivity, regardless of disability, lies in gaining equal access to the rest of the working world. Dennis Miller of Kirksville, Missouri, works as an independent living specialist for the Rural Advocates for Independent Living. His employer built an IBM clone especially for him, which includes a voice synthesizer that reads aloud the information appearing on the screen. A VersaPoint braille printer allows him to save electronic text to paper.

Miller got his first computer when he was 14, but it was signing up for CompuServe about a year ago that transformed his life. For the first time, he can do his own research, write and mail letters without assistance using CompuServe Mail's postal option and even buy clothes using the JCPenney catalog in The Electronic Mall.

The biggest threat the blind face is the world's infatuation with graphics, according to Miller. While his \$11,000 computer system is equipped with a Kurzweil Personal Reader that reads aloud the text on the screen, it cannot "read" graphics. Pointing to the current dearth of text-based computer games as an indication of the future, Miller says, "People want to see nice pictures, but nice pictures are not something the blind have access to." As a member of several committees on the state level to help design parts of the "information highway," he insists, "The

blind and visually impaired will have access to this technology."

Just as Miller is doing politically, David Henderson of West Sussex, United Kingdom, believes it is the responsibility of all disabled people to educate others about their needs. "Since it's unnatural to think of sickness and disability, it is something that people need to be taught," he explains. It is up to the disabled person to do that teaching. Henderson suggests that the disabled should honestly and openly discuss the equipment they need to be most productive on the job with their employers. Employers can help by listening and providing equipment support whenever possible.

Henderson, a teacher of physics at Collyer's Sixth Form College in Horsham, has chronic-progressive multiple sclerosis, which in just five years has left him in a wheelchair. He praises his employer, who recently allowed him to work part time on a permanent contract, an unusual arrangement. The school has paid for and installed whatever equipment he has requested, including handrails on steps and modification of the physics laboratories to make them more accessible to him. The British government also loans power wheelchairs and other hardware to any disabled person who works full or part time, and Henderson has taken advantage of this program.

Using a Macintosh Classic II with extra RAM, two hard disks, a DeskJet printer, CD

reader and a fax modem, Henderson says it is his computer that allows him to continue writing and teaching. He stores all of his teaching notes in the computer and uses it extensively for class preparation, a process that takes much longer than when he was well. "Computers have allowed me to teach better and—given the disability—to teach at all," he adds.

Besides giving the disabled the ability to work productively and with dignity, computers also have expanded lives in other ways. "I saw my life closing in because I couldn't move as far or as fast as others," says Thom Bloomquist, a certified registered nurse anesthetist in Ahoskie, North Carolina, who contracted polio in 1951 at 13 months of age and suffers from postpolio syndrome.

Using a '486DX IBM clone, CD-ROM, tape backup, VGA monitor and joystick, Bloomquist uses his computer not only for business purposes, such as billing patients and scheduling, but also for professional and personal communications. An expert on computers and anesthesia, Bloomquist frequently speaks around the United States to other nurse anesthetists on integrating technology into their work.

No matter what their disability, the disabled want the same things everyone else wants. "We want self-esteem through accomplishment. We want the ability to *do*," Bloomquist explains.

Employers can best serve their disabled

staff by keeping them in the decision-making loop. "The disabled have already found ways to cope. They can be an employer's prime resource for figuring out how they can best function in the workplace," Bloomquist says, noting that CompuServe is an ideal resource for employers to learn more about hardware, software and other adaptive technology that accommodates the disabled. ☒

How Employers Can Help

Adaptive computer technology has opened new job opportunities for the disabled that didn't exist as little as 10 years ago. When a disabled person comes on staff, many employers find they need a crash course on which hardware and software to purchase, whether it's as simple as adding a "sticky key" feature to a keyboard to allow sequential input of key combinations or as complex as installing a screen reader, software that reads aloud text on a monitor, on a networked PC.

Chuck Letourneau, chief of the Adaptive Computer Technology Centre, Environment Canada in Hull, Quebec, and an active member of the Disabilities Forum (GO DISABILITIES), offers these suggestions for solving typical problems faced by employers and their disabled employees:

In most large companies, the human resources department hires and accommodates the disabled employee, while the information technology group offers technical support. Buck the corporate trend and encourage the two to work together to better link the employee and the adaptive computer technology into the office.

Knowing what hardware and software to purchase is the big question. Before buying or installing anything, employers should conduct a thorough job and employee evaluation to make sure the right equipment is being purchased. Ask these questions: What is a typical workday? What barriers are there in the office?

Adaptive computer technology increases a disabled employee's productivity, but it doesn't cure the disability. Expectations often exceed reality, making essential training and support for both supervisors and employees.

Identify adaptive tools that work effectively on the office's standard systems so the disabled employee's computer will be compatible with that of colleagues.

Managers often perceive the cost of adaptive technology to be too high; however, most people can be accommodated for less than \$7,500. This includes the price of the computer workstation, adaptive technology and employee training.

Employers concerned that there is no in-house tech support for adaptive computer technology can turn to CompuServe's forums for assistance.

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A Digital Curriculum Vitae

► Electronic and multimedia resumés are biographies with a bonus.

Taken a hard look at your resumé lately? Sure, it lists your relevant experience, contact information, maybe even some personal interests. But does it have pop-up photographs of your spouse and kids, a recorded message from you and Tarzan-yell sound effects?

David Coleman's resumé does. It's a colorful "multimedia interactive resumé" that lets users click icons to view information about his marketing and promotion experience in the entertainment industry, his past achievements and his professional goals.

Late last year, he placed his resumé in several online libraries, including in the Broadcast Professionals and Multimedia forums. More than 500 users downloaded the program, and about a dozen followed up with phone calls. While no one has come through with a firm offer, Coleman believes his flashy approach will pay off. "Obviously, this is not a conventional way of presenting oneself, but

what the heck?" says the Atlanta, Georgia, resident who is considering buying a video capture board so he can include a short video clip of himself. "The more bells and whistles, the better."

Coleman is among a growing number of people conducting job searches online and drawing employers' attention to their resumés by uploading them to forum libraries in a wide range of electronic formats. The multimedia-savvy such as Coleman are uploading interactive resumés using HyperCard or Macromedia Director.

Desktop publishers and photographers are packaging their electronic portfolios using GIF images, TIFFs or Kudo Image Browser. Many others—from marketing specialists and software experts to aviators and entrepreneurs—are uploading resumés in plain old ASCII or preformatting them in word processing texts for professional-looking printouts.

Still others, such as Tony Abella, a Miami, Florida-based drafting and design specialist,



JOHN DICKERSON

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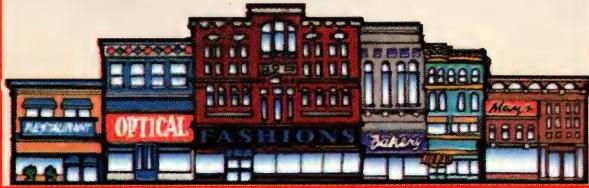
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needed. He tends to give more consideration to electronic resumes, partly because it's so easy to fire off follow-up questions and then read the responses at his convenience.

That speed of exchange also appeals to Art Elligsen, who has hired several computer consultants for his Arlington Heights, Illinois, company based on electronic resumes. In addition, he says, electronic resumes are easier to read than faxed ones. Elligsen is partial to those preformatted with word processing programs, such as WordPerfect, because he likes to print them on his own letterhead when presenting them to prospective clients. "If the resume is electronically delivered, I don't have to retype it."

John Gallagher, a Kansas City, Missouri-based employment manager for Analysts International Corp., a data-processing consulting firm, hires several people a month through electronic resumes. He especially likes the fact that resumes in forum libraries are easily searched with keywords. "That allows hiring managers such as myself to quickly find and read resumes of immediate interest," Gallagher says.

Chris White, a software demonstrator in West Sacramento, California, for the Wilton, Connecticut-based company Right Source Inc., says her firm does almost all of its searching for computer professionals online, regularly visiting a wide variety of forums, including the OS/2, LAN and the Public Relations and Marketing forums.

Garry Fairbairn, editor of the Canadian newspaper *Western Producer*, found some of his newest employees through electronic resumes. "We don't have a big staff—about 22 in the editorial department—but in the last five years, we have hired two people who first made contact with us via the Journalism Forum," he says.

For those in high-tech fields, more elaborate electronic resumes, such as Coleman's,

not only grab employers' attention but also show off the submitter's talent. Another advantage: They can be packed with lots more information than a conventional one without looking cluttered, says Tom Palmer, director of marketing and creativity at Bit by Bit Communications, a Chicago firm that creates electronic portfolios for commercial artists and electronic sales literature for corporations. "I can fill up an electronic resume with sounds and photos, which are hidden until someone wants to see them," says Palmer, whose HyperCard resume is available in several online forums. "Interactive multimedia self-promotions are a fantastic means of telling people about myself, especially since design studios and advertising agencies all have powerful computers to display my creations, which is an important consideration."

Indeed, according to many experts, the most efficient electronic resumes may well be those that can be read by the widest variety of computers—at least until document-exchange software such as Adobe Acrobat and Farallon Replica become more widespread. The best bet is to stick with ASCII and GIF presentations, since most users already have some form of GIF viewer and ASCII files can be read in any simple word processor.

There are several ways job hunters can get the most out of their electronic resumes. Here are some tips from online experts:
When writing an ASCII resume, make sure that words don't get cut off at the margins. Don't write in all capitals, avoid jargon and acronyms, and use asterisks to frame words or phrases for emphasis.

Compress a large resume file with a utility such as PKZIP. Use two or three different formats and include a READ.ME file that explains which word processor was used and

what version. Always include a version that is ASCII only.

Check with sysops before uploading an electronic resume to a forum library because rules about resumes vary from forum to forum. Some discourage them entirely because information in them

ages quickly. Others welcome them and have libraries designated for that purpose, such as Library 15, "Take 5/Want Ads," in the Autodesk AutoCAD Forum (GO ACAD). Some forums have specific rules about what format resumes should take, such as the *Entrepreneur's Small Business Forum* (GO USEN), which requires that all resumes be in ASCII text. Still others have a standard resume-file format, such as that outlined in the file EXAMPL.TXT found in Library 16, "Member Resources," of the International Trade Forum (GO TRADE).

It's also worth remembering that uploading any kind of electronic resume is a little like "fishing in murky waters," according to Michel Yavercovski, who searched for work as a marketing manager for high-tech products by leaving his preformatted Microsoft Word resume in computer-oriented forums. After two months, he didn't get a single nibble, and eventually found work the old-fashioned way—through a newspaper ad.

Even Coleman agrees, adding that an online resume should be considered just one component of a carefully orchestrated job search. Besides, he says, his ongoing job search has taught him something else: A lot of business executives out there have yet to learn to use a computer. "So," Coleman acknowledges, "you still have to have a paper version as well." ☀

PERSONAL ENTERPRISE

*Martha Barnette is a Louisville, Kentucky-based writer and author of *A Garden of Words* (Times Books/Random House). Her CompuServe User ID number is 75300,3140.*

Work History Help: Resume Guidance Files

Before starting any job search, consider searching CompuServe's forum libraries for information about electronic resumes, shareware and commercial resume programs, resume templates and general tips on resume writing.

For more information, search forum libraries using the keywords RESUME and JOBS. Here's a sampling of online files:

COMPUTER CONSULTANTS FORUM (GO CONSULT)

Resumé-on-a-Disk—Shareware program called "The Digital Resumé" lets you create an interactive resume. Includes space for work samples. Library 3, "Getting Started," DIGRES.EXE (63,488 bytes).

Resumedia—Colorful demo of one type of electronic resume. Library 8, "Microcomputers," RESUME.ZIP (73,728 bytes).

COURT REPORTERS FORUM (GO CRFORUM)

Resumé Master—Resumé generator that formats and prints information as a professional-looking one-page resume. Library 8, "Utilities/Shareware," RESMST.EXE (157,361 bytes).

DESKTOP PUBLISHING FORUM (GO DTPFORUM)

Resumé Conference—Edited transcript of a Desktop Publishing Forum online conference, "Writing Resumes—Stuff You Should Know," featuring resume expert Barbara Nixon. Library 1, "Forum Transcripts," RESCO.TXT (29,838 bytes).

Resumé Tips—Excerpts from Barbara Nixon's book *First Impressions—Your Career Planning Guide for the '90s*, including information about resumes, all in WordPerfect 5.1 format. Library 15, "DTP Marketing," RESUME.ZIP (46,386 bytes).

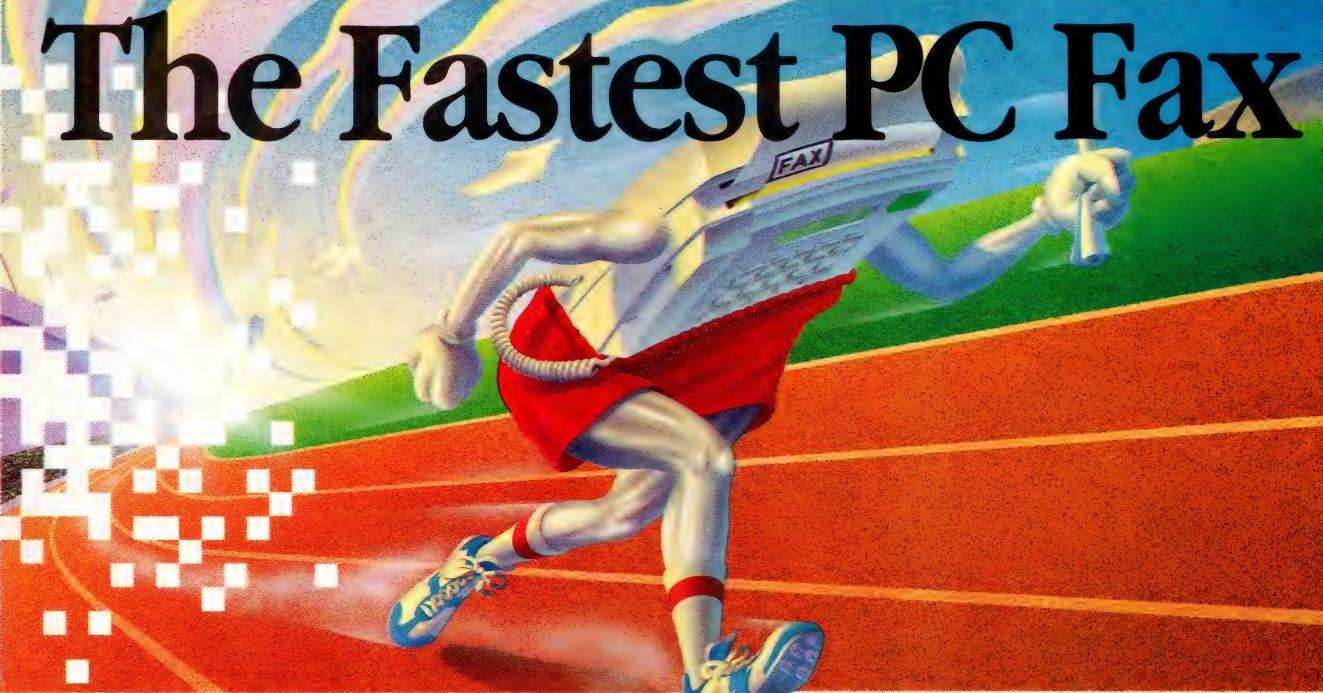
Mac PageMaker Resumé Template—A PageMaker 4.0.1 template for creating a resume. Library 7, "Samples & Templates," RESUME.SEA (29,824 bytes).

ENTREPRENEUR'S SMALL-BUSINESS FORUM (GO USEN)

Interactive Resumé Demo—Information about how to obtain a multimedia interactive resume by David Coleman, along with a demo based on his own resume. Library 6, "Business Resources," CUSTOM.ZIP (158,313 bytes).

GRAPHICS SUPPORT FORUM (GO GRAPHSUP)

High-Tech Resumé—Sample files of high-tech resume with GIF image of job applicant. Library 12, "Graphics Demos," RESUME.ZIP (166,583 bytes).



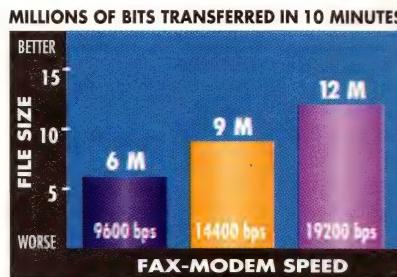
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by Dan Kening



Plastic money for public phones carries culture and history, too: Telephone cards

Card-Carrying Collectors

► Finally, a collectible for today's global telecommunications age: colorful phone debit 'telecards.'

People collect all sorts of things. Some collect common items, such as stamps and coins. Others collect more unusual items, such as jokers from playing cards or firecracker labels. In Hawaii, there's even a craze for collecting milk bottle caps from the state's small dairies.

One of the newest collecting rages is prepaid telephone debit cards, known to those who collect them as "telecards." In use throughout most of the world and avidly discussed in Section 8, "Telecards," of the Collectibles Forum (GO COLLECT), these credit card-sized plastic cards allow people to make calls from public phones without using coins.

Sold for various monetary values, telecards are inserted into telephones, which "read" the number of call units available. Once a call is completed, its cost is subtracted from the card. Depending on the country and telephone system, the cards use either optical strips, magnetic stripes or tiny silicon chips to record transactions.

Telecard use is so popular that in Germany, France, the Benelux countries and Japan coin-operated pay phones are virtually obsolete because of the proliferation of public phones that accept telecards. It's estimated that outside the United States users buy \$4 billion worth of telecards each year.

With the mania for collecting anything and everything, some say it was inevitable that these utilitarian items would become collectible. "Soon after they came into use, people realized that these plain pieces of

disposable plastic were great vehicles for advertising, information and, most of all, attractive pictures," says Makiko Itoh, a regular in the Telecards section who designs cards for AZA CommNET in New York. "In that way, they're like stamps, except bigger and more durable."

It's easy to see why people get hooked on collecting this new outgrowth of modern telecommunications technology. Klaus Warschkow's interest in telecards began when he encountered them during holiday visits to Britain and Turkey five years ago. "You can find used cards literally on the ground in some countries," says the Wuppertal, Germany, resident. On a two-week holiday to Crete last year, Warschkow found more than 150 used cards. "Before that, I was collecting American stamps, but telecards are much more interesting," he says.

Forum member David Shum of Hong Kong got started when he received three of a four-card series, illustrated with antique telephones, as a premium from Hong Kong Telecom. He wanted the fourth card in the series, so he shopped several Hong Kong telecard stores. "To my surprise, I found out that the fourth card was selling for 12 times its face value in the market," says Shum.

There are several categories of telecards. Similar to stamps, "definitives" are everyday-use cards, which are used indefinitely and are reprinted when required. Examples of definitive cards are British Telecom's green cards and the orange cards of Belgium. Commemorative cards have decorative or thematic designs and usually are issued for a limited time, such as a set of 25,000 cards issued by NYNEX (the holding

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▼
Local-Content Forums,
p. 39

Telecard Data: Collectibles Forum Files

Check out the Collectibles Forum's (GO COLLECT) Library 8, "Telecards," for GIF images of telecards from around the world. Also, download text files that contain background information about telecard collecting and collecting resources.

All About Telecards—Informative text file that describes and explains the different telecard systems in use around the world. PHONE2.TXT (13,024 bytes).

Telecards Around the Globe—List of the countries and their respective telecommunications companies and systems that issue telecards. PHONE3.TXT (21,742 bytes).

Telephone Company Addresses—Addresses of telephone companies that sell cards directly to consumers. PHONE1.TXT (11,856 bytes).

Collector's Clubs—List of addresses of telecard collectors' clubs around the world. PHONE8.TXT (3,377 bytes).

Collectors' Publications—Addresses of prominent telecard collectors' magazines and newsletters. PHONE9.TXT (2,052 bytes).

Dealer List—List of telecard dealers in Europe and Australia. PHONE1.RES (8,030 bytes).

First Telecard Conference—Transcript of CompuServe's first telecard conference, featuring Larry Crosby of AmeriCall Corp., which issued the first set of U.S. sports telecards. CONF1.ASC (13,462 bytes).

German Language Database—A German-language shareware program for organizing telecard collections on your PC. TELEFO.ZIP (377,383 bytes).

NFL Telecards—A GIF file showing 10 cards featuring U.S. National Football League players manufactured and marketed by the AmeriCall Corp. AMCALL.GIF (193,391 bytes).

German Telecards—Information about the different telecard series of Germany. PHONE5.TXT (7,380 bytes).

India's Telecards—All about the telecards in use in India. PHONE4.TXT (2,945 bytes).

Spiderman—Two telephone cards of Marvel Comics' Spiderman, one with Venom attacking and one with the Green Goblin. MRVL5.GIF (51,315 bytes) and MRVL2.GIF (57,346 bytes).

Santa in Singapore—Set of three Singapore cards depicting Santa Claus. XMAS13.GIF (66,665 bytes).

U.S. Bowl Games—Set of four cards showing U.S. National Football League playoff games. AMBOWL.GIF (139,516 bytes).

Coca-Cola—Telephone card from Iceland of the famous soft drink. IS_COK.GIF (40,256 bytes).

Wild One—German card of Tarzan of the Apes. TARZAN.GIF (59,661 bytes).

Goofy—Private German card of the Walt Disney character Goofy. DISNEY.GIF (43,273 bytes).

Windmill—One of the first set of regular issues from Estonia. EEWIND.GIF (69,776 bytes).

Audi—An Audi car driving through the Danish countryside. AUDI.GIF (41,902 bytes).

Reptile Mania—Various cards with a reptile theme. TCREPT.GIF (29,703 bytes).

Orchestral Sounds—Musical instruments from a classic German orchestra. INSTRU.GIF (28,736 bytes).

Hendrix and Beethoven—A card depicting Jimi Hendrix and Beethoven. One in a set of six U.S. cards. TCUSRE.GIF (69,931 bytes).

company for New York Telephone) to celebrate the luge event at the 1994 Winter Olympic games in Norway. The cards were sold only during the games. There also are cards that advertise commercial products and services, which are sold to the public directly by the advertisers, such as cards issued by Budweiser depicting a product logo imprinted on a blimp.

CompuServe members around the world find the Collectibles Forum a prime resource for buying, selling and trading telecards, and for disseminating information about the fast-growing hobby, which is most popular in Europe and Asia. German collector Ulf Helmke corresponds and trades with members in Finland, New Zealand, Australia, Canada, France, Germany and the United States. He obtained Christmas telecards offered by the new U.S. telecommunications company AmeriVox at face value from Collectibles Forum staffer and San Antonio, Texas, resident Mike Fisher. "Mike has better access to U.S. cards than I do, while I can supply him with most German cards," says Helmke. "One of the big advantages of the forum is trading cards that are easy to find in your country for those from someone in another country."

Like stamp collectors, many telecard collectors specialize. Some collect by country, such as Warschkow, who specializes in cards from Finland, Norway, Russia, the Caribbean and the Pacific. Others collect those issued by telecommunications companies, and still others by the motifs on the cards

—ranging from animals to sports-related topics. Helmke specializes in cards from Denmark and those with transportation motifs.

"The graphics on telecards lend themselves to an attractive display as well as the opportunity to collect topically," says Alexandria, Virginia, resident Ron Abler, leader of the forum's Section 7, "Other Collectibles," and who was recently introduced to telecard collecting by forum members. "Telecards are small, compact and standard-sized, which makes them easy to store, catalog and display."

Numerous GIF files available for downloading from Library 8 (see "Telecard Data," above) exemplify the vast range of telecard designs from around the globe: A German card shows the face of a black cat. Another German card displays full-color artwork of Marvel Comics' Spiderman in action. A set of three Christmas telecards from Singapore show Santa Claus at Singapore Airport, in downtown Singapore and in front of the renowned Raffles Hotel. Another set of telecards display scenes from U.S. National Football League bowl games. It's estimated that there are at least 10,000 designs or motifs on German telecards alone.

As with many collectibles, telecards can be a good investment. In fact, some telecards are already fetching as much as \$2,000 on the open market. "It feels great when you get a card at its face value and then see its price

go up," says Shum.

For many collectors, though, telecards are much more than an investment. Abler, for example, collects them because they represent "artifacts of a revolution in technology." "The development of the technology in telecards mirrors the development of the larger telecommunications industry, and they serve as collective bits of history," Abler says.

A burgeoning industry accompanies the telecard-collecting phenomenon. A variety of catalogs track their value, and a number of publications have sprung up for collectors. There are even albums available to display the cards.

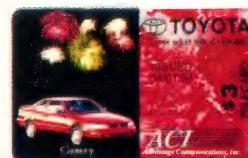
As happens when a collectible attracts a lot of enthusiasts, collectors' shows spring up. In March, the first United States show exclusively for telecard collectors—"Phone Phair"—was held in San Francisco. Telecard section leader Jim Moran of Hoffman Estates, Illinois, hosted the Collectibles Forum's coverage of the weekend event in the section, while forum regular Mike Feltault prowled the aisles with his laptop, providing regular reports from the collectors, dealers and exhibitors.

To celebrate the event, the section held several trivia and other contests with telecards as prizes.

"For now, I'd say that our Telecard section is the best single resource for the telecard hobby," says Abler. "In fact, all of the printed resources that I know about were either written by, provided by or available from our members. What else could one ask for?"



Endangered species series



Camry success celebrated

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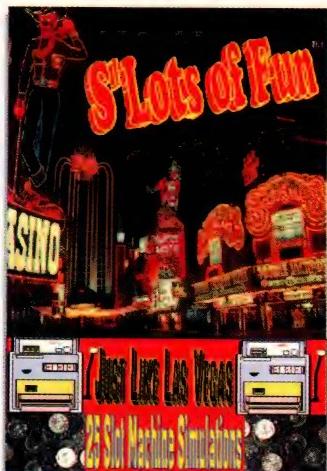
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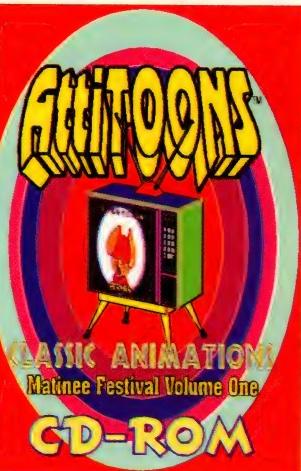
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International Info-Trade

► 'Local' forums and services spur nifty cross-cultural dialogue.

Hearing that the cost of food is higher in relation to income in the United Kingdom than in the United States, David Singh, an entrepreneur from San Marcos, California, got an idea for a new British product: grocery store coupon books. To test its viability, he posted a message in the U.K. Forum asking if coupons are used in the United Kingdom and if their values are doubled, as they often are in U.S. supermarkets. The same day, Ian Stirling of Hursley Park, Winchester, United Kingdom, replied that yes, coupons are used in the United Kingdom but double-off coupons aren't. Although the idea was a good one, Singh decided to pursue other projects.

Similarly, Dan Lufkin, a Frederick, Maryland-based free-lance translator, sought help for an international research dilemma online. "When I was translating a Swedish government economic report, I needed the proper English title of a Swedish local official," he says. He posted a message in the Foreign Language Education Forum, and Rolf Salme, a Swedish diplomat living in Beijing, responded. Salme had a document listing all government titles. He answered the question and sent the list.

These obscure questions are just two of many that are answered daily in CompuServe's various country- and region-specific forums, news wires and databases. Currently, there are local-content services for Germany, Japan and Australia/New Zealand, in addition to those for the United Kingdom and the United States. Numerous other forums also offer local-language, local-content information in German, French, Dutch and other languages. Members worldwide use these resources to meet business, educational and personal needs. (See "Overview of 'Local-Content' Services Online," p. 40.)

To impress clients and vendors, James F. Downton, manager of Motorola Cellular Infrastructure Group's Technical Education and Documentation Services in Arlington Heights, Illinois, speaks a little Japanese. He is studying the language and has taken a weekend job at a Japanese supermarket to submerge himself in it.

Not yet fluent, however, he needed a good Japanese dictionary to interpret daily e-mail, fax and phone messages from Motorola's offices in Osaka and Tokyo, Japan, as well as the cooking instructions on grocery labels. He consulted the Japan Forum's Library 5, "Software PC & Other," which contains English-Japanese dictionaries as well as a German-Japanese version.

Downton also found tutoring software

and contacted a Japanese pen pal in the forum. "I can ask my pen pal candid questions—business or personal—without fear of embarrassment that might arise if I asked my Japanese business associates," he says.

Albuquerque, New Mexico, resident Janiece Mondale turned to the Japan Forum for a different reason. She sought members who share her interest in *kyudo*, a type of Japanese archery. As a Rotary high school exchange student to Gojome, Japan, she learned *kyudo* but has been unable to continue it in the United States because there aren't any instructors in her area. After posting her query, Mondale soon was swapping information about the differences between Japanese and Western archery and titles of books on *kyudo*.

The exchange of information online is not limited to Americans curious about other countries. Japanese members, such as Masanobu Taniguchi of Tokyo, vice president of a Japanese religious organization, turn to

CompuServe for in-depth coverage and discussion of global current events. For example, during the standoff in Waco, Texas, last year between the FBI and members of the Branch Davidian cult, little information appeared in the Japanese media about cult leader David Koresh and his followers. Taniguchi turned to the Executive News Service to collect U.S. news reports about the conflict. He then shared his knowledge during lectures on religion he delivered in Japan.

Also, when Japanese Prime Minister Kiichi Miyazawa made controversial statements about the American work ethic, Taniguchi discussed them with American members in the Journalism and Foreign Language Education forums. "I found surprising discrepancy between American and Japanese views. Eventually, I produced a short essay on this subject," he says.

Christian Fridgen, a computer science student in Mindelheim, Germany, wanted to study at an American university for a year. Before deciding on the University of California at Berkeley, he researched his options using Peterson's College Database, which contains descriptions of more than 3,400 accredited or approved U.S. and Canadian colleges. "I got all of the information I needed, including which university suits me best, the possibility of getting an apartment, costs, addresses—all the things I wanted to know. I was even able to choose classes to take, and the database told me which universities offer them," Fridgen says. At the end of his search session, the database selected

Berkeley for him, based on his responses. He starts classes there in August.

Members also use country- and region-specific resources simply to meet people from other countries and cultures. Josh and Jan Groshans of Sherman Oaks, California, had a specific reason for seeking acquaintances in the Pacific Forum: They were getting married in Sydney and needed two witnesses. Because many of their family members were unable to attend the couple's wedding, originally planned for California, they decided on Sydney, a city they both love.

Through the local Registry office in Sydney, they received via fax the necessary forms and instructions for an Australian marriage. Their only problem was finding two witnesses. "The Registry suggested pulling in two people off the street, but somehow that didn't seem right," Jan says. "Because Josh and I had met online, it seemed appropriate to find our witnesses online." They posted a message in the Pacific Forum and soon met their volunteer witnesses, Sydney residents Tom Milledge and Robert Cranna.

After conversing online with Milledge and Cranna for several months, the Groshans flew to Sydney, where they were married in March 1993. Milledge organized a post-nuptial lunch, then flew the couple from Wollongong to Sydney Harbor and back in his own twin-engine Beechcraft Duke. Later, Cranna and his wife treated the Groshans to the Royal Easter Show. "They made our Sydney trip more special than a honeymoon," says Jan.

Before Peter Bohi, a resident in gynecology and obstetrics at a hospital in St. Gallen, Switzerland, traveled to Southern California for the Catalina Island Jazz Trax Festival, he visited the California Forum. He posted a message asking if any members were willing to show him their "private California."

Forum member Margi Clark of San Dimas responded and provided extensive help. She made Bohi's hotel reservations with her auto club card, so he could enjoy a discount. She also got him UCLA Bruins football tickets and took him to L.A.'s best hamburger joint. Bohi went to the jazz festival with two other California Forum members who introduced him to the festival's organizer and several of the musicians.

CompuServe's various country- and region-specific offerings help members find the information and contacts they need to work and play in the global village. Even more local-language and local-content services will be available in the future as CompuServe continues to build its network worldwide. (See "Direct-Dial Sites," p. 41.)

RANDOM ACCESS



James F. Downton

CINDY CHARLES

Douglas Jackson is a free-lance writer and editor living in Tokyo. His CompuServe User ID number is 76004,2312.

An Overview of 'Local-Content' Services Online

The CompuServe Information Service provides forum and database support to its members in 138 countries via extensive local-language and local-content services in German, Dutch, French, Italian and Spanish. In addition, full international character set support, making possible the use of diacritical marks for languages such as Danish, French, German, Spanish and Swedish, is available throughout the service.

The number of forums and databases that offer local-language content and are devoted to specific countries continues to expand. To find services related to a country other than the ones listed below, use the FIND command with the name of the country as the keyword (for example, FIND GERMANY or GERMAN).

The '+' symbol indicates an extended service; '\$' designates a service that carries an additional surcharge. The language of the service is indicated, if other than English.

ASIA/PACIFIC

Australian Associated Press Online (GO AAPONLINE)

Offers continuous local Australian news and information.

Australian/New Zealand Company Library \$ (GO ANZCOLIB)

Contains selected directory and news information on more than 95,000 public and private businesses from such databases as D&B-Australian Dun's Market Identifiers, D&B New Zealand Dun's Market Identifiers, Asia-Pacific and Reuter Textline.

Japan Forum + (GO JAPAN)

For discussion of Japanese culture, politics, history, business, travel, sports, language and other topics.

Pacific Forum + (GO PACFORUM)

General interest forum with topics related to Australia, New Zealand and the Pacific Rim.

Pacific Vendor Forum + (GO PACVEN)

Product support provided by Australian and New Zealand manufacturers and distributors such as NetComm, Maestro, SoundBlaster, Windows Solutions and others.

FRANCE

The following forums are in French.

Associated Press France en Ligne (GO APFRANCE)

Provides real-time local French news and information.

Microsoft France Forum + (GO MSFRANCE)

Offers support to French-speaking developers of Microsoft-related products.

PC Expert Forum + (GO PCEXPERT)

Discuss software, hardware and the computer industry with editors, experts and industry insiders, get the latest news on trends and popular products, download shareware.

GERMANY

The following forums are in German.

Borland Deutschland Forum + (GO BORGER)

Direct support, software files and product reviews for Borland products.

CA-Clipper Germany Forum + (GO CLIPGER)

Technical support for programmers and Clipper users.

CA-Micro Germany Forum + (GO CAMICRO)

Technical support for German-language Computer Associates products such as Textor and dbFast.

Der Spiegel Forum + (GO SPIEGEL)

Access articles and interact with editors from Germany's leading news magazine.

Deutsches Computer Forum + (GO GERNET)

Discussion of German computing topics and issues such as society, politics and sports.

Deutsche Presse-Agentur (German News) \$ (GO ENS)

Full-text German-language articles from Germany's premier news agency; part of the Executive News Service.

Deutsche Presse-Agentur Kurznachrichtendienst (GO DPANEWS)

Selected articles from this German news agency.

Deutsches Windows Magazine Forum + (GO GERWIN)

Support for readers of Ziff Germany's *Windows Aktiv* magazine, including discussion with editors, Windows-related support and downloadable shareware utilities.

Dr. Neuhaus Forum + (GO NEUHAUS)

Technical support and information about Dr. Neuhaus modems from Dr. Neuhaus representatives.

German Company Library \$ (GO GERLIB)

Databases with directory and credit information on more than 48,000 German companies; some German text.

IBM PSP Deutschland Forum + (GO OS2UGER)

Support forum provided by the German IBM PSP division offers information on all OS/2-related subjects.

Lotus GmbH Forum + (GO LOTGMBH)

Technical support for users of Lotus products for DOS, OS/2, UNIX and Windows.

Magna Media Forum + (GO MAGNA)

Readers of M&T German computer magazines communicate with other readers and the editors.

PC Direkt Forum + (GO PCDIREKT)

Interact with the editors of PC Direkt magazine, which offers the latest news on the German PC mail-order market.

PC Industrie Forum + (GO PCIND)

Provides vendor support and product information from Tobit Software, Quarterdeck, miro Computer Products, CPV Datensysteme, Multimedia, Fast Electronic.

PC Professionell Forum + (GO PCPRO)

Communicate with the editorial staff, download software and read about new products in this German-language equivalent to *PC Magazine*.

Prisma GmbH Forum + (GO PRISMA)

Technical support for German-speaking Macintosh hardware and software users.

Toshiba GmbH Forum + (GO TOSHGER)

Technical support for German-speaking Toshiba product users, including help files and software products such as drivers, upgrades and utilities.

WordPerfect GmbH Forum + (GO WPGER)

Offers support for German-language WordPerfect products, plus downloadable updates and drivers.

UNITED KINGDOM

British Trade Marks \$ (GO UKTRADEMARK)

Database of all registered U.K. trademarks and pending applications.

Computer Shopper (U.K.) Forum + (GO UKSHOPPER)

Complement to *Computer Shopper* magazine with areas for discussing hardware, software, operating systems, utilities and its magazine articles.

PC Plus/PC Answers Online + (GO PCPLUS)

Area for direct communication with *PC PLUS* and *PC Answers* editors, submitting articles, and downloading and uploading shareware programs. Includes the *PC Plus/PC Answers Forum* + (GO PCPFORUM).

PC U.K. Online + (GO PCUKONLINE)

Area for communicating with the editorial teams of *PC Direct* U.K. and *PC Magazine* U.K. Comprises both the *PC Direct* U.K. Forum (GO PCDUK) and the *PC Magazine* U.K. Forum (GO PCUKFORUM).

Press Association Online (GO PAO)

Provides real-time worldwide news with a focus on events affecting the United Kingdom, delivered by the U.K.'s premier news wire provider.

Travel Britain Online (GO TBOL)

Database listing events and attractions occurring in the United Kingdom.

U.K. Accommodation & Travel Services (GO UKTRAVEL)

Databases from the U.K.'s Automobile Association include AA Accommodation (GO UKACCOM), AA Restaurants (GO UKREST), AA Golf Courses (GO UKGOLF) and AA Days Out (GO UKDAYS).

U.K. Communications Forum + (GO UKCOMMS)

News and discussion about PC communications, fax and cellular technology in the United Kingdom, plus support by modem manufacturers US Robotics, Pace Microtechnologies and Psion Dacom.

U.K. Company Library \$ (GO UKLIB)

Directory and financial information on 1.2 million U.K. companies from sources such as D&B-Dun's European Market Identifiers database and ICC British Company Directory.

U.K. Computing Forum + (GO UKCOMP)

Support from U.K. software and hardware companies and discussion on computer-related issues.

U.K. Forum + (GO UKFORUM)

Discussion of topics such as health, education, law, sports, politics, entertainment and business.

U.K. Historical Stock Quotes \$ (GO UKPRICE)

Pricing information for more than 5,000 U.K. equity issues and 350 market indexes.

U.K. Issue Lookup (GO SEDOL)

Database with the SEDOL number and a list of all equity issues for a given company, including a description of each issue.

U.K. Marketing Library \$ (GO UKMARKETING)

Full-text market research reports from top marketing analysts including ICC Key Note Market Research, Marketing Surveys Index and Mintel Research Reports.

U.K. News Clips (GO UKNEWS)

Full-text, U.K.-related stories from Reuters World news wire; included in basic services.

U.K. Newspaper Library \$ (GO UKPAPERS)

Contains articles from leading U.K. newspapers including *The Times*, *Sunday Times* and *The European*.

U.K. Reviews (GO UKREVIEWS)

Provides U.K.-based movie, video, book and theater reviews and soap opera previews.

U.K. Shareware Forum + (GO UKSHARE)

Forum for exchanging shareware-related information, downloading upgrades and meeting the authors of popular U.K. shareware programs.

U.K. Sports Clips (GO UKSPORTS)

Reuters World news wire sports articles covering cricket, football, snooker, rugby and more; included in basic services.

U.K. Weather (GO UKWEATHER)

Shows weather and forecast maps for the United Kingdom and short-term weather reports for more than 12 English cities and Scotland, Wales and Northern Ireland; included in basic services.

OTHER EUROPE

European Community Telework Forum + (GO ECTF)

Discussion among teleworkers, business managers, development organizations, equipment manufacturers and network operators around the world.

European Company Library \$ (GO EUROLIB)

Databases with financial information on more than 2 million European companies; includes summaries of European Community legislation.

European Forum + (GO EURFORUM)

Discussion of computing as it applies to European members and other issues such as politics, culture and travel.

Microsoft Benelux + (GO MSBEN)

Company information about Microsoft Benelux; Dutch.

Microsoft Central Europe Forum + (GO MSCE)

Support for Microsoft's German applications software and programming languages, and discussions among users and Microsoft Central Europe; German.

Microsoft Italy Forum + (GO MSITALY)

For developers of Microsoft-related products in Italy with support from Microsoft's technical engineers; Italian.

Microsoft Spain/Latin America Forum + (GO MSSPAIN)

Support for Microsoft's Spanish software; Spanish.

Microsoft Sweden Forum + (GO MSSWEDEN)

Support for Microsoft's Swedish applications software and programming languages, discussion with other users.

Reuters EC Report \$ (GO ENS)

Full-text news stories covering major European Community events.

Reuters News Pictures Forum + (GO NEWSPIX)

GIF and JPEG images of worldwide events from Reuter photographers.

Reuters World Report \$ (GO ENS)

Full-text news stories gathered from the Reuter news wires; covers European and global events.

VNU (NL) Online + (GO VNUNL)

Area for communicating directly with Personal Computer editors and for downloading programs, files and demos. Includes the VNU BPA Forum + (GO VNUPA); Dutch.

Weather Maps and Reports (GO MAPS, GO WEATHER)

Shows current and forecast maps for the United Kingdom and mainland Europe; included in basic services.

CompuServe Direct-Dial Sites

The CompuServe network, usually the most cost-effective method of accessing the Information Service, offers direct-dial access in many cities in addition to the CompuServe nodes in the United States: Calgary, Edmonton, Halifax, Montreal, Ottawa, Regina, Toronto, Vancouver and Winnipeg in Canada; Birmingham, Bristol, Edinburgh, London, Manchester and Reading in the United Kingdom; Berlin, Düsseldorf, Frankfurt, Hamburg, Hannover, Munich and Stuttgart in Germany; and Amsterdam, Barcelona, Brussels, Hong Kong, Madrid, Mexico City, Paris, Stockholm, Vienna and Zurich. There are no communication surcharges when accessing the CompuServe network from Europe during non-prime time (19:00 to 8:00 weekdays and all day Saturday and Sunday); the prime time surcharge is \$7.70 per hour (8:00 to 19:00 weekdays). In Hong Kong, the communication surcharge is \$10 per hour all day. In Mexico, the communication surcharge is \$8 per hour all day. When accessing from Canada, there are no communication surcharges at any time. For access numbers, GO LOGON.



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Downloadable Notables

Downloadable Notables is a monthly catalog of new and interesting uploads compiled by Associate Editor Christopher Galvin. You can suggest a file for mention by sending the full forum file description (including forum name, library, file name, size, title and summary) and a note explaining why it caught your fancy to CompuServe User ID 71154,74. Do not send the file itself or questions regarding listed files. Many mentioned program files are shareware; view the full file description online for details and please support the shareware concept. If you cannot locate a file, check the forum's News Flash for late changes or post a message within the forum to *SYSOP asking for assistance.

* * * * *

Memorable Images—The Archive Photos Forum (GO ARCHIVE) contains GIF pictures from one of the leading sources of historical engravings, drawings and photographs in the world, covering history, Hollywood, sports and more. Popular downloads include, from Library 2, "Focus: Film Posters," classic promotional posters for *Casablanca* and *War of the Worlds*.

C13371.GIF (125,465 bytes) and C13397.GIF (101,149 bytes).

From Library 5, "Famous People," a 1950 shot of Albert Einstein at a radio interview. C10660.GIF (112,036 bytes).

And in Library 14, "Civil War," the aftermath of a trench battle and Abraham Lincoln visiting a camp and battle site.

C4B83.GIF (143,121 bytes) and C4B84.GIF (84,246 bytes).

4-Door Fan Clubs—Interested in joining a car club? The benefits of membership, social and otherwise, are a frequent topic on the Automobile Forum (GO CARS), and the forum's Library 12, "Clubs/Events," is filled with Giff Kucsma's uploads listing contact data for clubs. Cars serving as the source of fandom range from common transports (Honda, Oldsmobile) to racers (Alfa-Romeo, Jaguar) to classics (Model-T, Edsel). Search the library using a car name as your keyword, or for a comprehensive list of files, the wildcard filename *.CLB.

Electronics Guidance—Notable uploads in the Consumer Electronics Forum (GO CEFORUM) include, in Library 2, "Video Hardware," a 1994 review of laser disc players cross-posted from the Internet. LD94.TXT (21,899 bytes).

Library 7, "Films/Theaters," has the popular and weekly updated Film Release Date List, charting upcoming cinematic attractions.

RELDTE.94 (13,000 to 20,000 bytes).

Library 8, "Satellite Systems," includes a Frequently Asked Questions file about Direct Broadcast Satellite, a new North

American television technology that utilizes 18-inch dishes, as well as a file listing channel lineups for various DBS services.

DBS.FAQ (41,660 bytes) and LINEUP.TXT (1,500 to 4,000 bytes).

Library 10, "Misc. Electronics," contains two how-to files on choosing the right alarm system and company, and a text essay about "What's On" shortwave radio.

HOME22.TXT (16,512 bytes) and HOME29.TXT (17,152 bytes).

SHORTW.JSA (21,475 bytes).

Library 15, "Desktop Video," includes tips on improving upon the quality of videotape copies.

VQUAL.TXT (5,816 bytes).

Hacker Tales—The Electronic Frontier Foundation Forum (GO EFFSIG) now has the full text (ZIPped) of Bruce Sterling's book *The Hacker Crackdown*, with a new electronic afterword, in Library 12, "Life in Cyberspace." One review called *Crackdown*

an entertaining "guide to the digital range wars between self-styled cyberpunk crackers and the cynically ambitious law enforcers who prosecute them."

HACKER.ZIP (271,049 bytes).

PC File Managers—Look to the IBM Systems Forum's (GO IBMSYS) Library 6, "File Utilities," for programs that keep your DOS hard drive's contents in order. New entries include: OBLIT, which destroys the content of a file byte by byte and then deletes it; Filesplitter, a utility for breaking big files into disk-transportable pieces; Visual Compare, which lets you see the color-coded differences between two program source files in a scrollable display; DF Lite for Windows, which places an image of various-size floppy disks on your hard drive, for making disk copies; ARCTOOL, an archive manager/shell handling every popular compression scheme; and Footprint, a small, fast utility run before and after a



This Month's FILE CLUSTER

Here again is the File Cluster, your spin around CompuServe's hardware-specific and general-interest forums, based on a search using one keyword. This month: Fishing rods and phones need one, and "having" one marks a jerk; a game show asked "What's mine?" for fun, guessing this thread of work: LINE.

Charts and Graphs—Line and bar graphs, pie charts and several other graphical representations of data are possible with this Amiga program. Amiga User Forum (GO AMIGAUSER), Library 13, "General Apps," AGRAPH.LZH (100,243 bytes).

Roaring Ladies—1920s bathing beauties on the beach pose in a chorus line in this gray-scale image. Archive Photos Forum (GO ARCHIVE), Library 16, "The Good Old Days," C1B43.GIF (116,9097 bytes).

Slippery Topic—Everything you ever wanted to know about synthetic automotive lubricants and additives such as Slick 50, Red Line and molybdenum disulfide. Automobile Forum (GO CARS), Library 13, "Technical Trends," SYNLUB.THD (144,781 bytes).

Colorize—Demo of a program that permits coloring of black-and-white line art in TIFF format, painting to the edge of lines or broken lines and transferring color on solid or complex textures. Great for cartoons, logos, complex graphics. Desktop Publishing Forum (GO DTPFORUM), Library 12, "Program Demos," COLRIZ.SEA (496,640 bytes).

Israel Line—Information on how to receive a free subscription to the Israel Line, the daily news service of the Consulate General of Israel

in New York. European Forum (GO EURFORUM), Library 8, "Classifieds," ISRAEL.TXT (1,422 bytes).

EZ-Tree Genealogy—An easy-to-use family tree program for IBM/compatibles with display and printing of many statistics and reports. Genealogy Forum (GO ROOTS), Library 3, "MS-DOS Software," EZT221.ZIP (199,887 bytes).

Opening Lines—When you're meeting someone new, which approaches leave a good impression and which don't? Three files archiving a forum discussion explore the topic. Human Sexuality Open Forum (GO HSX100), Library 1, "Dear Dennis N.," OPNLIN.TH1, OPNLIN.TH2 and OPNLIN.TH3 (approx. 50,000 to 60,000 bytes each).

ASCII Alterations—Reformat is a utility for IBM/compatibles for changing the line length of any text file to your specifications. Also strips carriage returns and line feeds. IBM Applications Forum (GO IBMAPP), Library 1, "Text Editors," REFORMAT.ZIP (15,719 bytes).

Programming Tool—COMTAP is a software serial communications line monitor and debugger, with microsecond time-stamp resolution, macro-record display, hypertext help and more. IBM Communications Forum (GO IBMCOM), Library 2, "Comm Utilities," COMTAP.ZIP (132,269 bytes).

software install which reports all modified, added or deleted files.

OBLIT.ZIP (16,325 bytes);
FSPLIT.ZIP (30,278 bytes);
VC154.ZIP (37,819 bytes);
WDF.ZIP (101,900 bytes);
AT800.ZIP (137,856 bytes);
FOOPT.ZIP (82,835 bytes).

Mindless Mac Fun—Check the Macintosh Entertainment Forum (GO MAC-FUN) for the latest Mac amusements. Library 2, "Action/Arcade Games," features the 16-color target game Xenos based on an arcade classic; Iraq Attack, Mark Adams' helicopter combat scenario; Shatterball, a nifty 3-D version of Breakout that suspends the brick layers in front of you; and DreamLight's Vertice, an original logic game that challenges you to contain a laser-light reaction by quickly altering a photon-energy lattice.

XENOS.SEA (297,472 bytes);

Finish Line—DOS or Windows utility that automatically learns words and phrases you use as you type, showing a window of likely text choices selectable via hot key. IBM Systems Forum (GO IBMSYS), Library 1, "DOS Utilities," FINISH.ZIP (DOS, 55,417 bytes) or FINISW.ZIP (Windows, 93,630 bytes).

Line-Item Item—A form for membership in the Americans for a presidential line-item veto. Issues Forum (GO ISSUES), Library 9, "Rush H. Limbaugh," LINE.TXT (1,012 bytes).

LineShare—This communication tool allows several programs to share a modem connected to your Macintosh by creating virtual "subports" that give each application a dedicated port. Macintosh Communications Forum (GO MACCOM), Library 3, "Scripts/Tools," LS.SEA (108,288 bytes).

Line Up!—A Mac board game much like Connect Four for one or two persons, with cool sounds and AppleTalk network play. Macintosh Fun Forum (GO MACFUN), Library 4, "Board/Ed/Card Games," LINEUP.CPT (72,832 bytes).

Graph Paper Maker—A program for IBM/compatibles that makes graph paper on HP LaserJet and LaserJet II printers, with customizable grid size and thick lines every nth line. Math/Science Forum (GO SCIENCE), Library 5, "Mathematics," GRDMKR.ARC (5,747 bytes).

Linewars—A popular 1991 three-dimensional space war game for modem-to-modem play, menu-driven with full terminal program included. Modem Games Forum (GO MODEMGAMES), Library 5, "Space Sims Games," LWR152.ZIP (79,768 bytes).

Fishy Explanation—What's with all the different colors of fishing line? This article outlines the specific use of each type. Outdoors Forum

IRAQAT.SIT (214,912 bytes);
STBL27.SEA (121,984 bytes);
DLIVER.SEA (619,136 bytes).

Library 4, "Board/Ed/Card Games," has BlackJack Deluxe, with "best play" tables, card-counting tutorial and cheat options; Hearts, with excellent graphics and sound; and Cary Torkelson's MacMines, a highly configurable version of the Mines board game.

B JACK.SEA (275,840 bytes);
HEARTS.SIT (407,680 bytes);
MACMIN.CPT (92,160 bytes).

Pet Advice Proffered—Stop by the Pets/Animal Forum (GO PETSFORUM) for informative files about the care of our furry, feathered and hooved friends. Library 3, "Dog Library," includes a long list of dog breed profiles provided by Canis Major Publications (search using the breed as keyword; 3,000 to 15,000 bytes each), as well as advice files on finding a breeder, shipping

(GO OUTDOORS), Library 5, "Fishing," LINE.CLR (10,488 bytes).

Northern Lights—A variation on the bouncing-line programs, this features a unique line fading and "crazy bounce" mode. PC World Online Forum (GO PWOFORUM), Library 15, "Graphics," NL100.ZIP (32,390 bytes).

Sci-Fi Education—A short text file describing classroom uses of the youth-oriented Star Trek novel *Line of Fire*. Science Fiction Forum (GO SCIFI), Library 2, "Star Trek," PAPER2.570 (4,248 bytes).

Going to Boston?—This DOS program lets you navigate the city's subway, with entry-point and destination data giving you a list of lines to take and stops. TrainNet Forum (GO TRAINNET), Library 13, "Computer/Electronic," MBTA.ARC (37,888 bytes).

SmilerShell—A "slick" Windows command-line shell that runs DOS and Windows programs; includes command history, editing and search; fast directory change over multiple drives; display of memory and resources. Windows Shareware Forum (GO WINSHARE), Library 9, "Program Managers," SMI20.ZIP (94,531 bytes).

Line Drawings—For WordPerfect users, one of a vast collection of illustration files—an assortment of human and animal caricatures, such as a boy opening a present and a laughing mouse. WordPerfect Users Forum (GO WPUSERS), Library 16, "Presentations/Graphics," GRIN2.ZIP (299,791 bytes).

Home Phone for Biz?—Can the phone company make a home-based business buy a business line? Should you anyway? This was the hot topic in this archived thread. Working From Home Forum (GO WORK), Library 1, "General Information," TELCOM.TXT (15,025 bytes).

your dog and how to prevent biting incidents with children.

FIND.TXT (9,708 bytes);
SHIP.TXT (9,096 bytes);
DOGKID.TXT (10,337 bytes).

Library 4, "Cat Library," has files on caring for a sick cat, cat toys both homemade and store-bought, and a humorous look at the "rules" felines need follow in living with humans, from the Internet.

SICK.TXT (6,224 bytes);
TOYS.THD (24,515 bytes);
NETCAT.TXT (21,087 bytes).

Library 7, "Software/Programs," contains a colorful multimedia PC presentation with facts, stories and tips for cat, dog and horse owners; a Windows WAV sound file of horse whinnies; and Electronic Zoo, a PC database of animal-related computer resources on the Internet and elsewhere.

HHASFX.EXE (345,191 bytes);
HORSEW.ZIP (30,802 bytes);
E_ZOO2.EXE (110,361 bytes).

Learning Experiences—The Students' Forum (GO STUFO) is a great source of educational and related software, with libraries devoted to schooling at different ages and the various areas of study. Library 2, "Grade/Middle School," includes Amy's Fun-2-3 Adventure!, a PC program teaching counting via a puppy's journey, and Express Lane, a Mac cash register game that teaches money handling.

AMYFUN.ZIP (884,736 bytes);
EXPRES.SIT (59,648 bytes).

Library 3, "High School," has ARFlash-Cards, a Mac HyperCard stack teaching 400 words and definitions often found on standardized tests such as the SAT.

ARFLAS.SIT (61,056 bytes).

Library 4, "College," has a HyperCard stack of the top 100 U.S. colleges with contact info, and ASSERT, a PC program that sees how a student fits on a "self-expression" scale.

SCHOOL.SIT (23,680 bytes);
ASSERT.ZIP (40,660 bytes).

Library 6, "Business/Careers," features HyperResumé for Mac, which helps you create an attention-getting hypertext résumé, and Bulls and Bears, a PC stock market game that teaches the effect of news headlines on areas of the economy.

HRESUM.SIT (40,064 bytes);
BAB.ZIP (38,461 bytes).

Library 9, "English/Literature," includes a HyperCard electronic book of Grimm's Fairy Tales with text and pictures, and 1,001 Topics for Composition, a PC program that lists and cross-references more than 1,300 subjects for journals, essays, research and other kinds of papers.

GRIMMS.SIT (290,944 bytes);
TOPICS.ZIP (74,723 bytes).

Book Reviews

Following are summaries of book reviews available for reading this month in *Online Today*. To read the complete reviews, use the GO commands listed at the end of each summary.

The Internet Roadmap

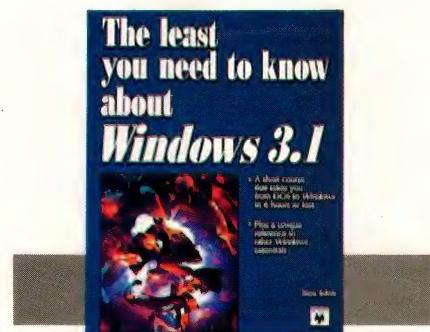
By Bennett Falk
Sybex Inc., 1994
263 pages, \$12.99 (softcover)

Although this is not one of the most complete books on the Internet, it is one of the most fairly priced and one of the easiest for Internet beginners to use, says reviewer Brian D. Monahan. GO OLT-5500

Upgrading and Repairing PCs (Third Edition)

By Scott Mueller
Que Corp., 1993
1,254 pages, \$34.95 (softcover)

This isn't a book for casual reading, but if you want to know how a computer works or how to repair it down to the tiniest part, you'll find it here. Reviewer Harry Green highly recommends it as a good bargain and a complete and authoritative source. GO OLT-5510



The Least You Need to Know About Windows 3.1

By Steve Eckols
Mike Murach & Associates, 1993
337 pages, \$20 (softcover)

Using Windows is a big jump from the clumsy but comfortable DOS command line, and this book will make that inevitable move easier. Reviewer Richard A. Danca admits the book is not a heavy-duty reference, but he says it's not trying to be, and herein lies its primary value. GO OLT-5550

Using MS-DOS 6.2 (Special Edition)

By Allen L. Wyatt Sr., W. Edward Tiley and Jon Paisley
Que Corp., 1993
1,115 pages, \$29.95 (softcover)

This understandable and concise book is packed with information on everything from DOS fundamentals to programming and configuring screens. Reviewer James Moran says, "Good job, good book, good buy." GO OLT-5530

Word for Windows 6 Super Book

By Herb Tyson
Sams Publishing, 1994
1,037 pages, \$39.95 (softcover)

Every facet of Word for Windows 6 is covered in this text through 14 workshops devoted to basic skills, as well as the many new features of this upgraded version. Reviewer Sharon Kahn says it is an excellent companion to the program. GO OLT-5540

Everything You Wanted to Know About the Mac: The Complete Reference Guide to Understanding the Macintosh (Second Edition)

By Larry Hanson, et al.
Hayden Books, 1993
1,232 pages, \$29.95 (softcover)

With something for everyone, from the absolute Mac beginner to the most sophisticated programmer, this comprehensive reference work is hard to beat, says reviewer Michael Naver. The title is no exaggeration. GO OLT-5520

Internet Starter Kit (for Macintosh): Everything You Need to Know to Get on the Internet

By Adam C. Engst
Hayden Books, 1993
641 pages, \$29.95 (softcover, 3.5-inch diskette)

If you think of the Internet as a gigantic, continuously updated library with a poor floor plan, use this book as a guide for understanding the system's operation and locating information caches. Aimed at the Macintosh user, it is understandable for readers at all levels of expertise, says reviewer John Edwards. GO OLT-5560

Customizing and Optimizing Windows NT

By Chris Pappas and William Murray III
Addison Wesley, 1993
400 pages, \$26.95 (softcover)

To maneuver the steep learning curve of Windows NT, this book will provide single and network users with methods of customizing and optimizing their installations of the program while avoiding its many potential problems, says reviewer Brian D. Monahan. GO OLT-5570

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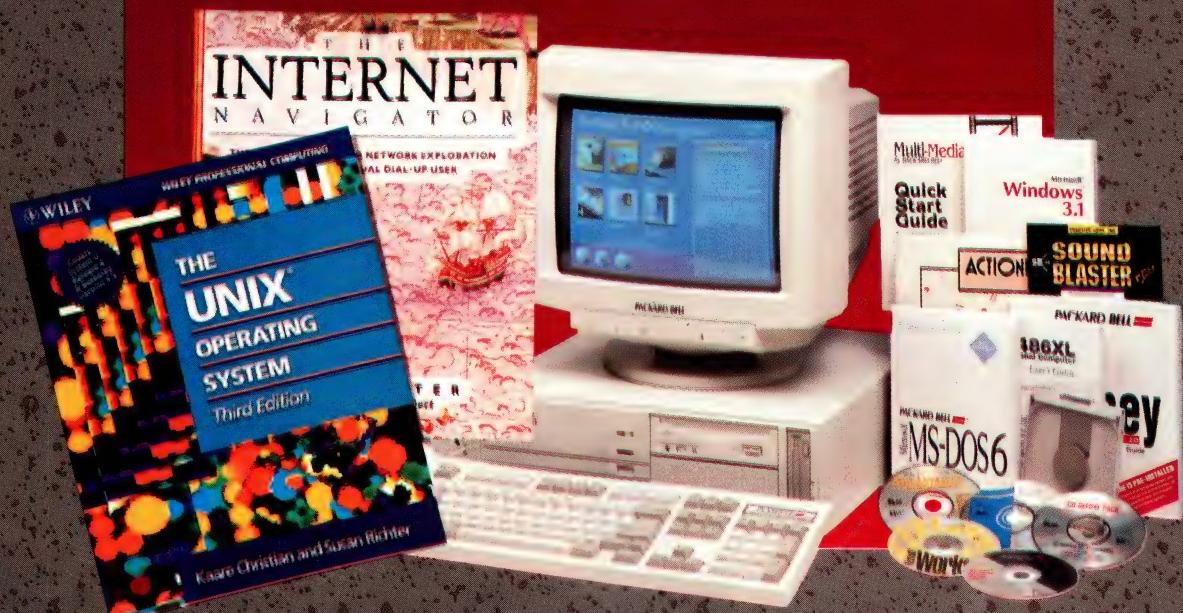
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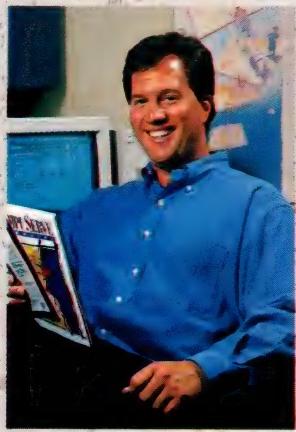
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See you online!

Keith Arnold

A handwritten signature in black ink, appearing to read "Keith Arnold".

Keith Arnold
Electronic Mall Manager

The central image is a collage of various computer-related items. At the top left is a dot-matrix printer. Next to it is a green printed circuit board (PCB) with various electronic components. Below the PCB is a book titled "THE UNIX OPERATING SYSTEM, Third Edition" by Kaare Christian. To its right is another book titled "THE INTERNET NAVIGATOR" by Paul Gilster. In the bottom half of the collage, there's a stack of colorful plastic diskettes (floppies) in red, yellow, green, and blue. A roll of yellow paper or tape is also visible. A Dallas Cowboys mouse pad is in the foreground. In the top right corner of the collage, there's a black rectangular device, possibly a modem or a small computer case.

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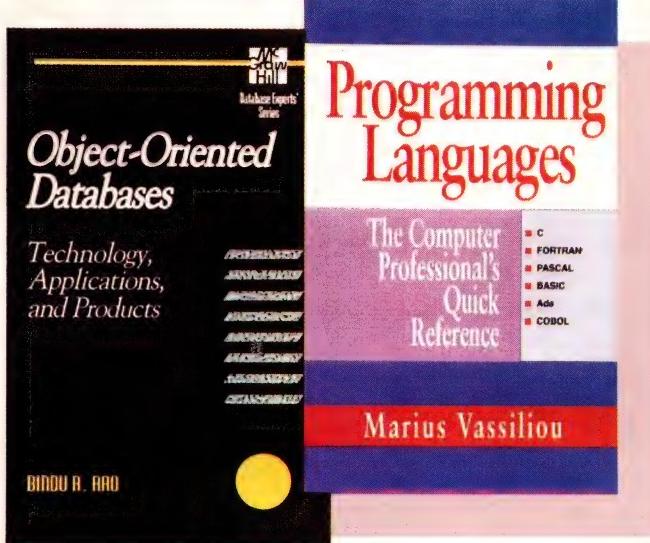
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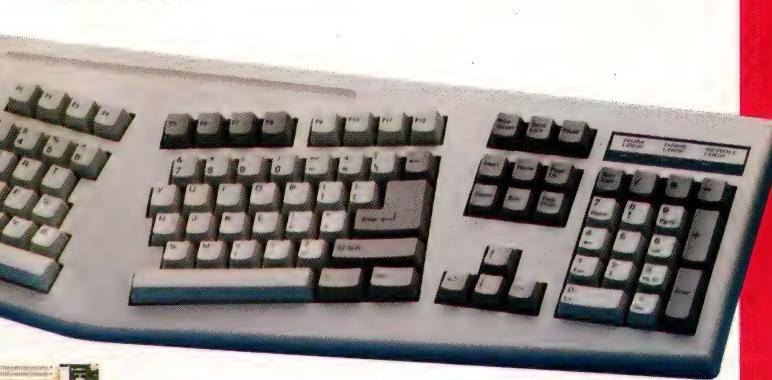
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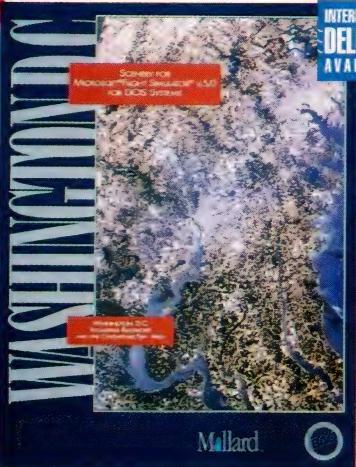
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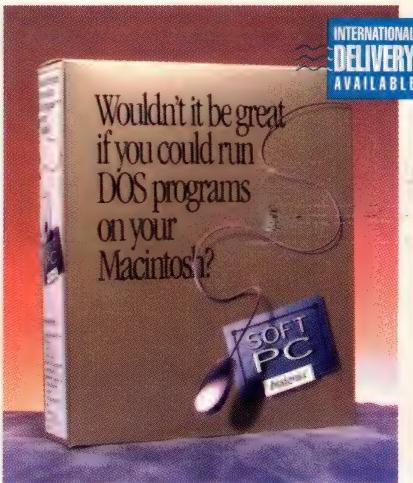
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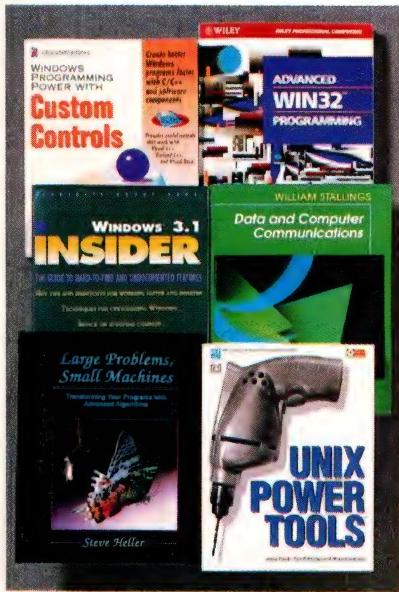
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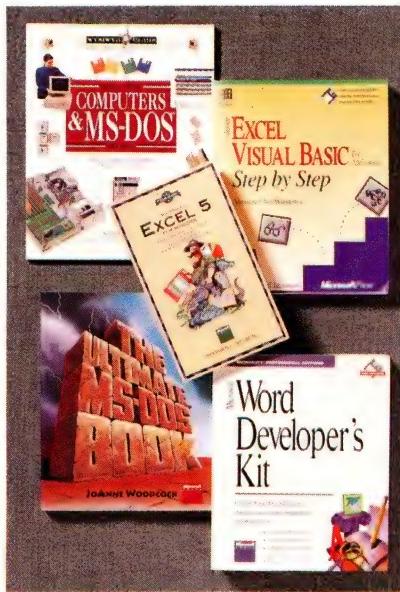
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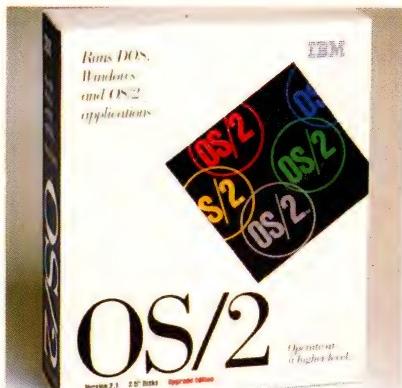
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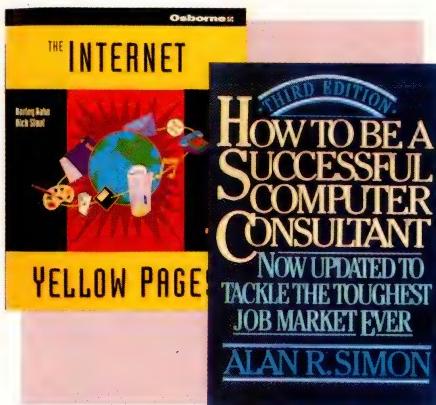
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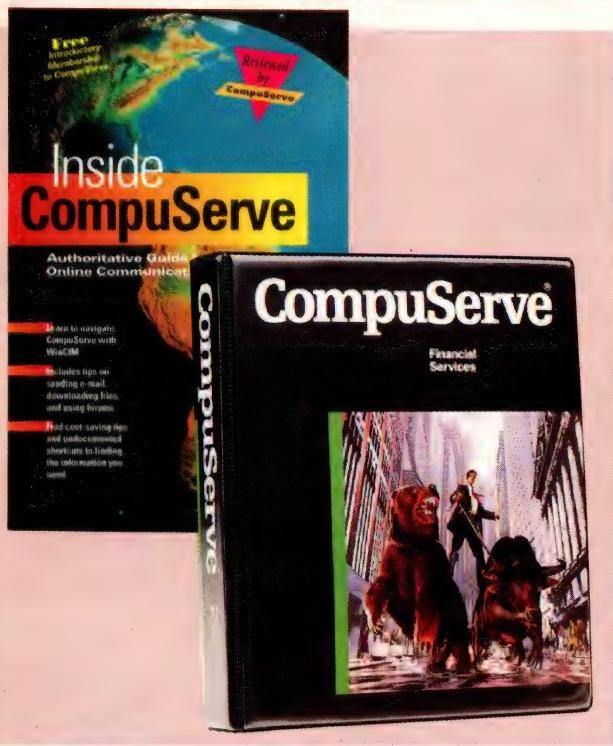


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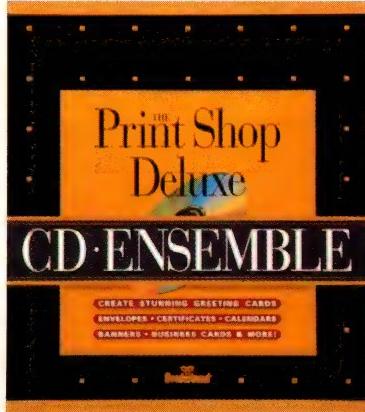
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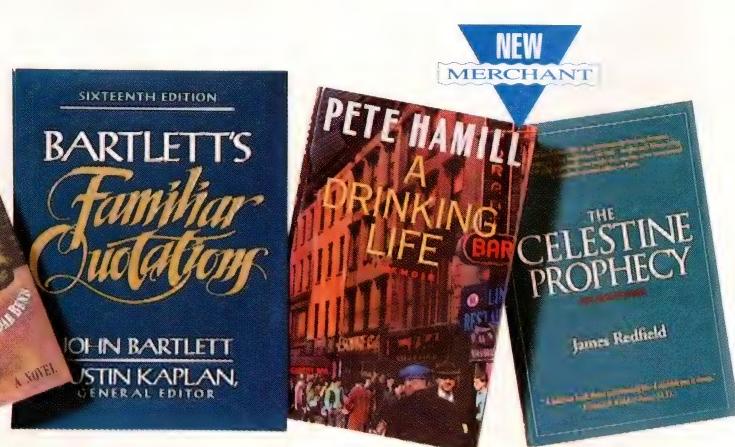
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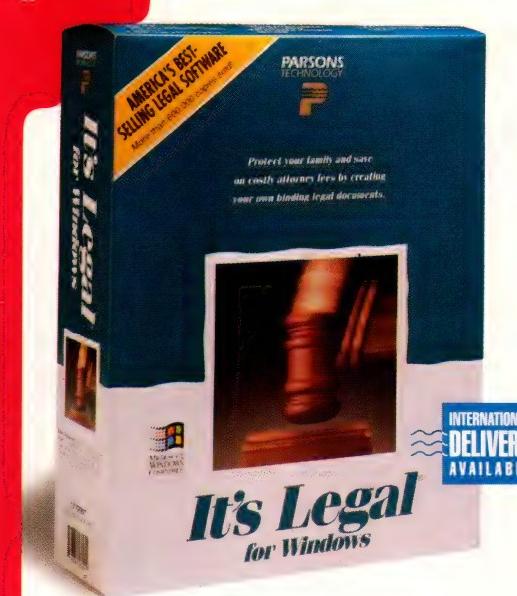
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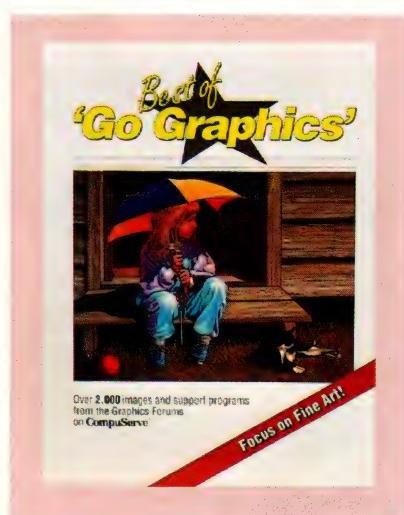
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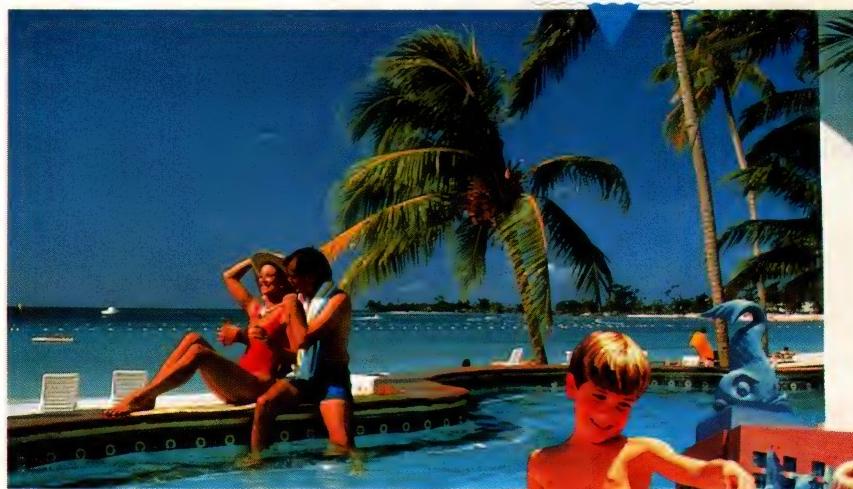
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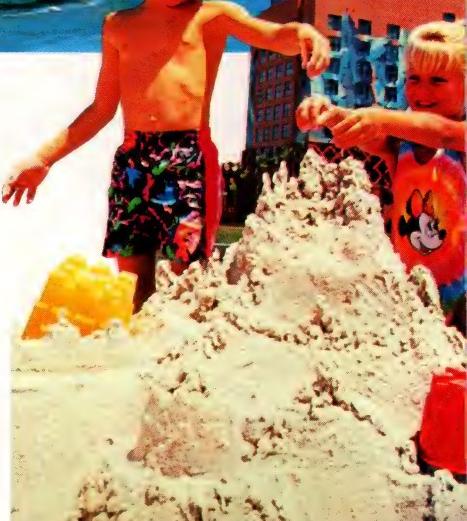
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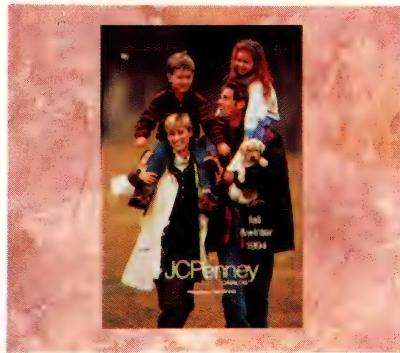
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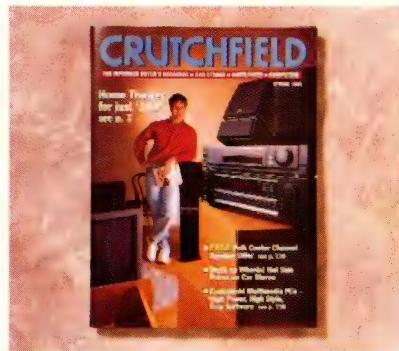
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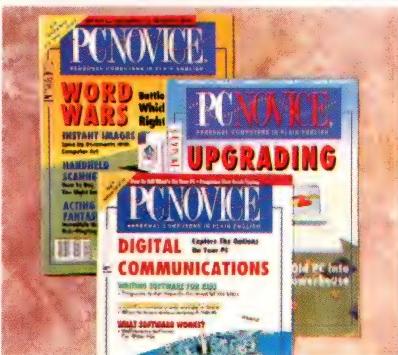
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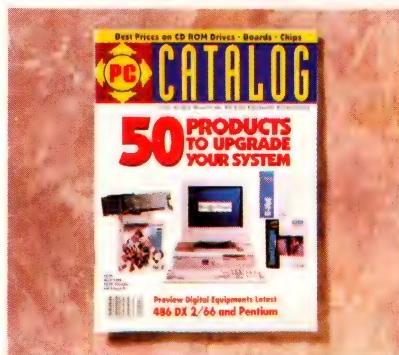
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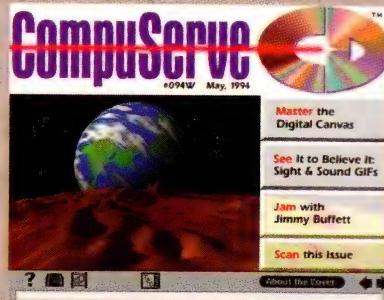
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TECHNOLOGY UPDATE

900 MHz breakthrough!

New technology launches wireless speaker revolution...

Recoton develops breakthrough technology which transmits stereo sound through walls, ceilings and floors up to 150 feet.

By Charles Anton

If you had to name just one new product "the most innovative of the year," what would you choose? Well, at the recent *International Consumer Electronics Show*, critics gave Recoton's new wireless stereo speaker system the Design and Engineering Award for being the "most innovative and outstanding new product."

Recoton was able to introduce this whole new generation of powerful wireless speakers due to the advent of 900 MHz technology. This newly approved breakthrough enables Recoton's wireless speakers to rival the sound of expensive wired speakers.

Recently approved technology. In June of 1989, the Federal Communications Commission allocated a band of radio frequencies stretching from 902 to 928 MHz for wireless, in-home product applications. Recoton, one of the world's leading wireless speaker manufacturers, took advantage of the FCC ruling by creating and introducing a new speaker system that utilizes the recently approved frequency band to transmit clearer, stronger stereo signals throughout your home.

150 foot range through walls!

Recoton gives you the freedom to listen to music wherever you want. Your music is no longer limited to the room your stereo is in. With the wireless headphones you can listen to your TV, stereo or CD player while you move freely between rooms, exercise or do other activities. And unlike infrared headphones, you don't have to be in a line-of-sight with the transmitter, giving you a full 150 foot range.

The headphones and speakers have their own built-in receiver, so no wires are needed between you and your stereo. One transmitter operates an unlimited number of speakers and headphones.



Recoton's transmitter sends music through walls to wireless speakers over a 75,000 square foot area.

a bookshelf-sized acoustically constructed cabinet, provides a two-way bass reflex design for individual bass boost control. Full dynamic range is achieved by the use of a 2" tweeter and 4" woofer. Plus, automatic digital lock-in

AWARD WINNING WIRELESS SPEAKER

Built-in receiver and amplifier: The wireless speaker and headphones both contain a built-in receiver and amplifier. Signals are picked up and transmitted as far as 150 feet away through walls without the use of wires.

Volume, Power, Tuning, 2" tweeter, 4" woofer, Individual left, right & mono switch and Individual bass boost control (on back)

Size: 9" H x 6" W x 5.5" L
Signal-to-noise ratio: 60 dB
Channel Separation: 30 dB
Two-way bass reflex design
10 watts/channel RMS amps
Frequency Response: 50 Hz-15 KHz

Don't take our word for it. Try it yourself. We're so sure you'll love the new award-winning Recoton wireless speaker system that we offer you the **Dare to Compare Speaker Challenge**. Compare Recoton's rich sound quality to that of any \$200 wired speaker. If you're not completely convinced that these wireless speakers offer the same outstanding sound quality as wired speakers, simply return them within 90 days for a full "No Questions Asked" refund.

Recoton's Design and Engineering Award



Breakthrough wireless speaker design blankets your home with music.

Crisp sound throughout your home. Just imagine being able to listen to your stereo, TV, VCR or CD player in any room of your home without having to run miles of speaker wire. Plus, you'll never have to worry about range because the new 900 MHz technology allows stereo signals to travel over distances of 150 feet or more through walls, ceilings and floors without losing sound quality.

One transmitter, unlimited receivers. The powerful transmitter plugs into a headphone, audio-out or tape-out jack on your stereo or TV component, transmitting music wirelessly to your speakers or headphones. The speakers plug into an outlet. The one transmitter can broadcast to an unlimited number of stereo speakers and headphones. And since each speaker contains its own built in receiver/amplifier, there are no wires running from the stereo to the speakers.

Full dynamic range. The speaker, mounted in

tuning guarantees optimum reception and eliminates drift. The new technology provides static-free, interference-free sound in virtually any environment. These speakers are also self-amplified; they can't be blown out no matter what your stereo's wattage.

Stereo or hi-fi, you decide. These speakers have the option of either stereo or hi-fi sound. You can use two speakers, one set on right channel and the other on left, for full stereo separation. Or, if you just want an extra speaker in another room, set it on mono and listen to both channels on one speaker. Mono combines both left and right channels for hi-fi sound. This option lets you put a pair of speakers in the den and get full stereo separation or put one speaker in the kitchen and get complete hi-fi sound.



These wireless stereo headphones have a built-in receiver.

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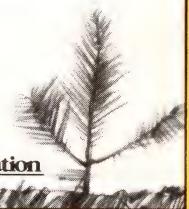


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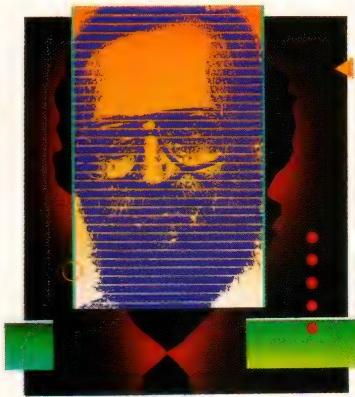
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Readers' Writes

How to Get the Most Out of CompuServe

with Charles Bowen



Charles Bowen is a contributing editor of CompuServe Magazine, author of CompuServe from A to Z and co-author of How to Get the Most out of CompuServe, both from Random House.

At the end of some feature articles in CompuServe Magazine, there are reference numbers cited after the titles, journal names and publication dates for related articles from Magazine Database Plus and Computer Database Plus (for example, #A12345678). When I enter these databases, how can I retrieve these articles directly without doing an extensive search?

**Stephen Shimizu Roxboro
Quebec, Canada**

If the cited articles are in Magazine Database Plus, for example, GO MAGDB and, at the introductory menu, select "Access Magazine Database Plus." At the subsequent menu, select "Search Magazine Database Plus." At the next menu, choose "Retrieve an Article by Reference Number" and, when prompted with "type article reference number," type the specific number (without the # sign), such as A14163518. The database displays the title of the article you have requested with a 1 in front of it. At the Enter Choice prompt, type 1 and the article is displayed.

In the addresses that accompany GO commands, some such as COLLECT and DINO are obvious to me. Also, I imagine that the "FO" in commands such as GO STUFO stands for forum. But what does the "SIG" mean in such addresses as GO TRAVSIG or GO EWFSIG?

**Ulf Helmke
Halstenbek, Germany**

"SIG" refers to "special interest group." Years ago, all of the forums were called SIGs. The online community began to favor

the term "forum" in the late 1980s. By then, however, some forums' addresses, such as LITSIG, TRAVSIG, LAWSIG and PRSIG, were well established and the term lives on.

Is there a place where I can find the Nikkei Index of quotes of Japanese stocks from the Tokyo Exchange?

**Luc Masuy
Namur, Belgium**

The Nikkei average is available on a day-delayed basis in the database of Historical Quotes (which also has the averages for every day back to 1989). To see it, GO SECURITIES and from the subsequent menu select "Pricing History, 1 Issue." At the Issue prompt, type TSNKI (which is the ticker for the Tokyo Stock Exchange Index). You'll be prompted for "(D)aily, (W)eekly, (M)onthly?" Choose Daily. The system then asks, "Starting date or number of periods from last pricing date?" If you type 1, you'll get the most recent quote.

How can you tell if someone has read a message sent by CompuServe Mail?

**James R. Dickey
Dallas, Texas**

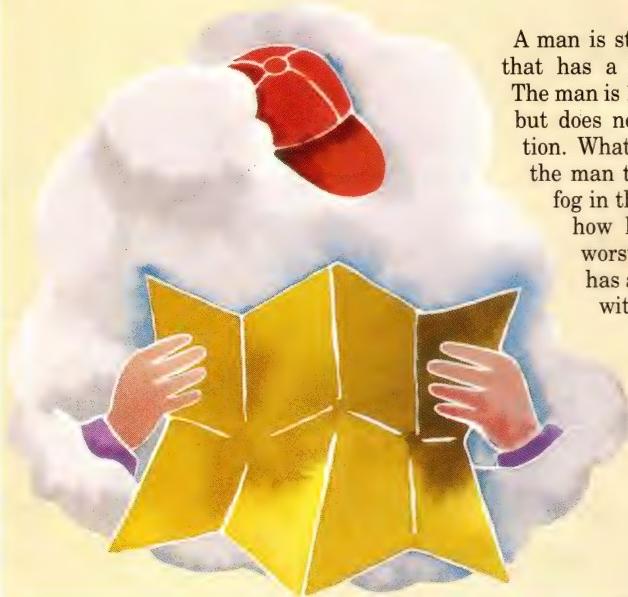
You can send CompuServe Mail with a "receipt," meaning that you receive an electronic notification in your mailbox when the addressee retrieves that note from his or her mailbox. A message sent with a receipt appears in the addressee's mailbox with a "Receipt notice pending" message on the menu.

If you are using one of the CompuServe Information Manager software packages, you can mark a "Receipt" box on the message-writing area of the program; if you are using a non-CIM general terminal package, you can send a receipt by typing /SEN RECEIPT at the end of the message.

Send questions to CompuServe User ID number 70007,411. If your question is answered in this column, we'll apply a \$25 connect credit to your CompuServe account.

Mensa® Puzzler

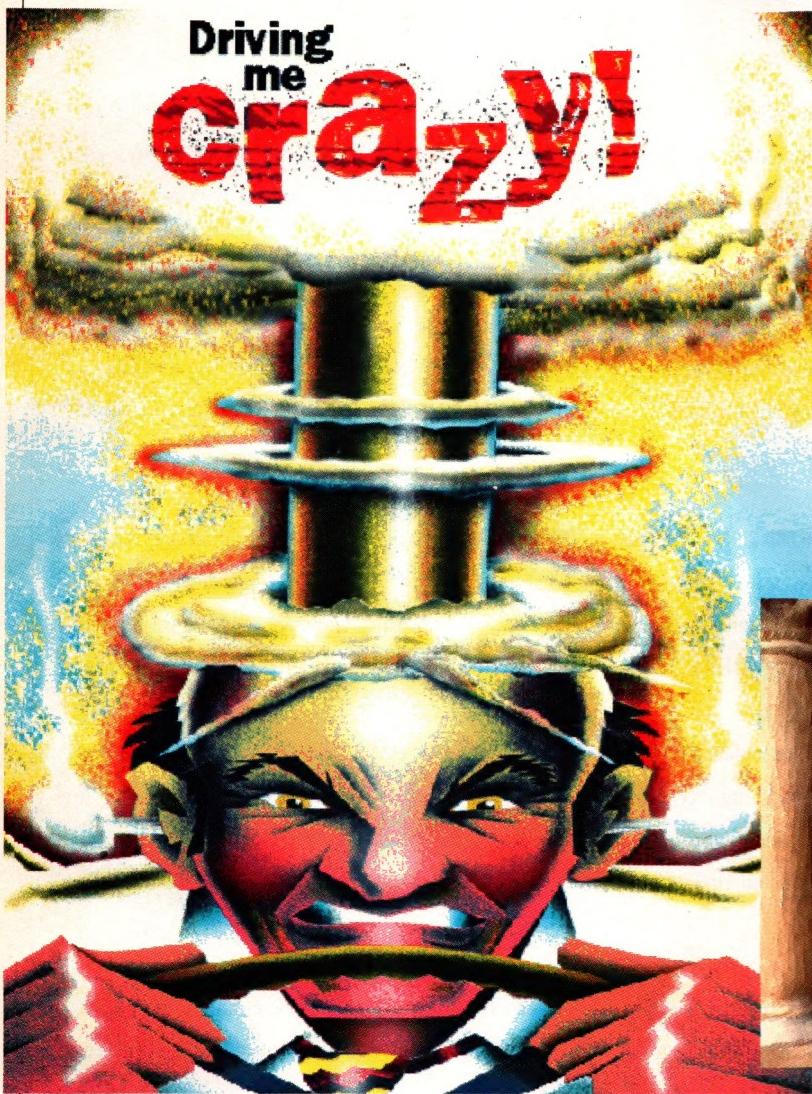
This month's puzzle was submitted by CompuServe member Nigel Chorley. You'll find the answer in the Mensa Forum's News Flash (GO MENSA).



A man is standing in a bank of fog that has a straight-edge boundary. The man is 1 mile from the boundary but does not know in which direction. What is the best pattern for the man to walk to get out of the fog in the shortest distance, and how long is his path in the worst case? Note: The man has a good navigation system with him.

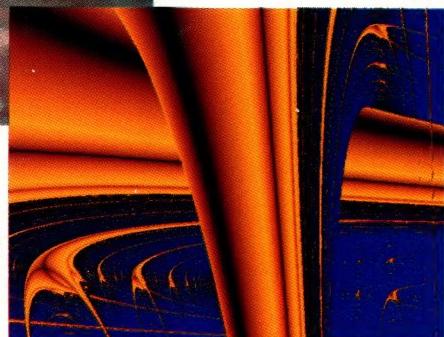
Do you have a Puzzler that you'd like to share with CM readers? Send your entry of no more than five brief puzzles (with answers) to: Puzzlers, CompuServe Magazine, P.O. Box 20212, Columbus, OH 43220. Include your full name, address, daytime telephone number and CompuServe User ID number. Puzzles that are not sensitive to character positioning may be sent by CompuServe Mail to User ID number 76004,3302. If your puzzle is used here, we'll credit \$35 to your CompuServe account.

Graphic of the Month



CompuServe Magazine's Graphic of the Month for July is a *Florida Today* illustration titled "Driving Me Crazy!" by *Florida Today* Graphics Director Octavio Diaz. The illustration accompanied an article on traffic stress and bad drivers in Brevard County, Florida. Diaz drew the illustration in pencil, scanned it into PhotoShop and then painted the image on a Quadra 950 Macintosh computer. The image can be found in the *Florida Today* Forum's (GO FLATODAY) Library 15, "Front Page Lounge," as file CRAZYD.GIF (176,425 bytes). Diaz has been a newspaper graphic artist for 17 years, and has been *Florida Today*'s graphics director for the last nine years.

This month's runners-up are "View of the Stanford Quadrangle" by Mark Dahmke, which can be found in the Computer Art Forum's (GO COMART) Library 10, "Painter Users Group," as file QUAD.GIF (158,782 bytes); and "Deep Space" by Detlef and Andreas Petrusch, which can be found in the Siemens Automation Group Forum's (GO AUTFORUM) Library 2, "Allgemein/General," as file LYA_32.JPG (128,333 bytes). Other nominees were GEESE2.GIF in the Photography Forum (GO PHOTOFORUM), BUDDHA.GIF in the Religion Forum (GO RELIGION), SHF03.GIF in the Graphics Gallery Forum (GO GALLERY) and C5B19.GIF in the Archive Photos Forum (GO ARCHIVE).



If you have a favorite image on CompuServe, consider nominating it as a Graphic of the Month. Provide the file name and identify the forum and library where the image is stored (do not send the files themselves) and send the information by CompuServe Mail to User ID number 76004,716. If the image you nominate is published in this column, you and the image uploader/creator will receive a \$25 CompuServe account credit. Image uploaders/creators are permitted to nominate themselves, but only one \$25 credit is applied to each member.

Introducing Pin-Based Computing

As a collector of lapel pins of all sorts, I am particularly interested in Olympic pins. After joining CompuServe, I discovered the Collectibles Forum and decided to post a note searching for other members with similar interests. I received three responses from members who offered to sell pins to me.

One member from Kentucky sold me 75 pins, most of them corporate pins from the Calgary games. A young man in Cali-

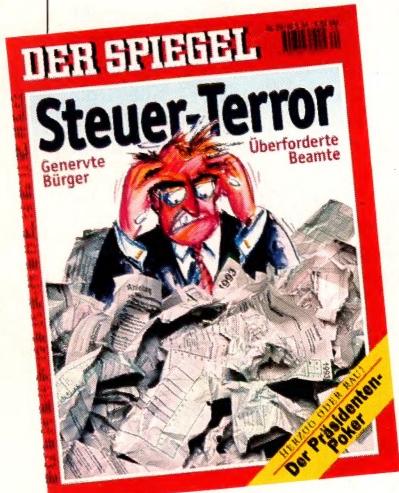
fornia sent some from the Los Angeles games and a tie clip from the Mexico City games. All told, I added more than 80 new pins to my collection. To date, I have almost 400 pins, half from Olympic games. Living only three hours from Atlanta, I am looking forward to expanding my collection during the 1996 games.

Eric Thomason
Dothan, Alabama

MEMBER ESSAY

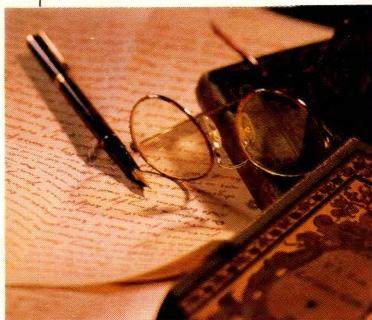
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UPDATE



Der Spiegel Debuts

Access full-text articles from the leading weekly German newsmagazine *Der Spiegel* in the Der Spiegel Forum. The magazine's articles are available online two days before the publication hits the newsstands each week. Members can also exchange opinions with the editors and other readers in the message sections. GO SPIEGEL



TOM HOGAN

Enter Your Essay

Tell *CompuServe Magazine* in 200-400 words how the CompuServe Information Service has saved the day or changed your life, and you could win \$100 connect-time credit. If your entry is chosen, you'll win the credit, and your essay, photo and brief bio will be published in the December member essay cover story. The top 48 entries will receive a \$25 gift certificate from select Electronic Mall merchants. Submit entries via CompuServe Mail to User ID 76004,3303 no later than 15 August, 1994. For complete contest information, GO ESSAY.

Would an international CompuServe convention interest you? Take an online survey through 15-Jul to share your views about a convention in which members, customer-service representatives, sysops, online notables, software developers, and others meet, learn, and imagine the future together. If implemented, the convention will be held in a major U.S. city. GO CSConv

Find out about the pending July collision of Comet Shoemaker-Levy/9 and the planet Jupiter in the Astronomy Forum. Discuss the issue in Section 13, "Jupiter & Comet SL9." Search the forum's libraries using the keywords COLLISION or COMET SHOEMAKER for related text and image files. GO ASTROFORUM

Starting 20-Jun, the first 10,000 ZiffNet members to GO SIDEKICK can get Borland's Sidekick for Windows for only the cost of connect time. ZiffNet members on the Standard Pricing Plan can download a fully functional copy of the software for about \$3 at 9,600 bps—a substantial savings over the retail price of \$29.95. To download, GO SIDEKICK. For information on your current pricing plan, GO ZIFFMEM.

Video-game enthusiasts gather online in two forums. The Video Game Publishers Forum features news and support from video-game industry leaders such as Data East, Electronic Arts, Game Genie, and Spectrum Holobyte. Meet and exchange tips with fellow game players in the Video Games Forum. To access the Video Game Publishers Forum, GO VIDPUB. To access the Video Games Forum, GO VIDGAMES.

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First-time users of Computer Buyer's Guide receive up to a \$5 rebate on surcharges incurred during their first session in July. Retrieve manufacturer profiles and product reports, many including vendor information and "street" prices. GO COMPBG

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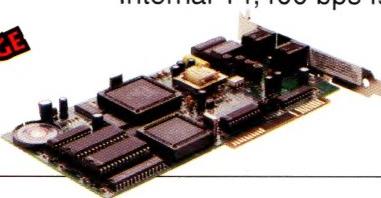
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